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ABSTRACT

A study examined the participation of handicapped individuals in apprenticeship programs. Data for this state-of-the-art review were gathered from an extensive review of the existing literature, interviews, mail and telephone surveys, site visitations, and structured meetings. It was found that the number of handicapped persons participating in apprenticeship represents less than 2 percent (and very probably less than 1 percent) of the total apprentice population. Education and rehabilitation professionals tend to relate the factors facilitating or acting as barriers to disabled persons' participation in apprenticeship to systemic features of the apprenticeship system. On the other hand, representatives of apprenticeship tend to see these same factors more in terms of the characteristics of individuals and requirements of the trades. The information (both statistical and descriptive) available on handicapped persons' participation in apprenticeship is limited, anecdotal, and related primarily to special projects. Four successful apprentice programs including disabled persons were documented. A strong effort in public relations is needed to inform employers, union leaders, parents, and the general public of opportunities for handicapped persons in apprenticeship. Fifty references are cited. (Appendixes include lists of key federal and state agencies and national and international organizations concerned with apprenticeship and education and training for handicapped persons.) (MN)

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# PARTICIPATION OF HANDICAPPED IN APPRENTICESHIP: THE STATE-OF-THE-ART

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# PARTICIPATION OF HANDICAPPED IN APPRENTICESHIP: THE STATE-OF-THE-ART

## PURPOSE:

To conduct a state-of-the-art study on the participation of handicapped individuals in apprenticeship programs that will help close the information gap, especially related to the role which apprenticeship can play in the transition from school to work for young handicapped adults, and stimulate further program development.

## PROCESS:

Identify and review all existing information pertaining to the topic; generate new information through strategies such as interviews, mail and telephone surveys, site visitations and structured meetings; prepare a preliminary report to be used as input to a round table discussion session culminating in the completion of the final state-of-the-art report; and disseminate the results and findings of the study through conference presentations and articles in professional publications.

## OUTCOME:

The final report will (1) determine the extent of handicapped participation in apprenticeship programs; (2) determine policy and program issues and concerns related to handicapped participation in apprenticeship; (3) identify exemplary programs and practices which facilitate handicapped participation in apprenticeship programs; and (4) identify areas for future research in this problem area.

## BENEFITS:

The study will assist federal and state agency officials in policy formulation and development; aid professional personnel in the fields of vocational rehabilitation, special education, vocational and technical education, and industry employment and training in program development and implementation; and provide useful career planning information to handicapped individuals and advocacy organizations.

# I. INTRODUCTION

## A. Purpose and Objectives of the Study

The purpose of this project was to define the state-of-the-art in a specific problem area. The specific problem area addressed was the lack of information on participation of handicapped persons in apprenticeship, especially related to the role which apprenticeship can play in the transition from school to work for young handicapped adults. The rationale for a study in this area may be summarized in the following key points:

- Handicapped persons are disproportionately represented in our nation's workforce as well as in major education, training, and employment programs whose primary purpose has been to assist individuals to access the world of work. (Halloran and Razeghi, 1981; Rees and Gregory, 1981).

- Recent federal and state policy and program initiatives, as well as professional associations, have placed increased focus on the critical importance of transition from school to work/postsecondary education for the handicapped. (See, for example, the Special Issue, Summer 1981, of Career Development for Exceptional Individuals and the April, 1984 Rehab BRIEF).

- Apprenticeship represents a viable employment and training program nationally (Rice, 1982); apprenticeship has been demonstrated successfully to facilitate the school to work transition (Darin and Williams, 1982; Martin, Williams and Darin, 1981); and, apprenticeship has potential for meeting the employment, training and school to work transition needs of handicapped individuals (Cobb and Larkin, 1983; Holler and Gugerty, 1984; and U.S. Congress, House Committee on Veteran's Affairs, 1983).

- Limited attention has been focused on this area, however, and little information is available in the professional literature. National perspective articles on school to work transition for handicapped often fail to cite apprenticeship programs (see, for example, the article cited earlier by Halloran and Razeghi, 1981); articles on exemplary programs for the employment and training of the handicapped have not included apprenticeship (see, for example, a report by Phelps and Triechel, 1983, which reviews exemplary programs with an emphasis on industry-education collaboration).

- More information is clearly needed, then, if the full potential for handicapped participation in apprenticeship is to be realized. Such information can assist federal and state agency officials in policy formulation and development; it can aid professional personnel in the fields of vocational rehabilitation, special education, vocational and technical education, and industry employment and training in program development and implementation; and, it can provide useful career planning information to handicapped individuals and advocacy organizations.

The purpose of the project, then, was to conduct a state-of-the-art study on the participation of handicapped individuals in apprenticeship programs to help close the information gap and stimulate further program development. Some of the important questions addressed were:

- What is the present degree and extent of handicapped participation in apprenticeship? Can meaningful estimates be derived?

- What types of handicapping conditions are being accommodated and in which trade areas are handicapped individuals being prepared? Can meaningful estimates be derived?

- Do existing federal and state guidelines and standards facilitate access of handicapped persons into apprenticeships? What incentives (e.g., legislative) encourage use of apprenticeship for handicapped persons?

- What barriers limit the access of handicapped persons to apprenticeship programs? Barriers may include attitudes, policies and practices, architecture, transportation and equipment, and communications (Rice, Hughes, Lowman, Etheridge, Laslett and Mace, 1981).

- What recommendations can be made to improve program development, implementation and evaluation in this area (e.g., in coordination between education, rehabilitation and industry at the federal, state and local levels)?

Before moving on to specific aspects of the project, some additional background information may be helpful. The next sections, therefore, provide brief overviews of apprenticeship and apprenticeship's role in school to work transition for the handicapped.

## B. Overview of Apprenticeship

Apprenticeship is a unique, voluntary training system through which individuals acquire trade and craft skills and knowledge. Training combines daily on-the-job instruction in manipulative skills with periodic classroom instruction in technical subjects related to work requirements. Practical aspects of work are mastered on the job as apprentices are rotated through all phases of their particular occupations. Theoretical aspects of work are mastered during related subjects instruction in the classroom. This arrangement of on-the-job and classroom instruction is a standard part of typical apprenticeship indenturing agreements (Rice, 1982).

The apprenticeship system stipulates requirements about the time period for training, pay, and performance expectations. The majority of programs require three to four years of work and study to complete an apprenticeship. Since apprentices are full time employees of the company in which they are apprenticed, the system includes a pay schedule for apprentices while they train.

For centuries, apprenticeship has been a preferred method of training. Millions of workers have been trained to perform effectively in skilled and

technical occupations. Rice (1982) identified seven advantages for individuals participating in apprentice programs:

1. Gaining varied skills through instruction and experience in all major aspects of a trade or craft.

2. Learning to work in harmony with different types of trades and crafts people in a work setting.

3. Learning to work within a company or work organization.

4. Learning about each skilled worker's part in the productivity plan of the industry and/or business.

5. Receiving a wage with regular increases while learning a skilled craft or trade.

6. Increasing employability and economic security.

7. Receiving recognition as skilled workers, from peers, journeyworkers, employers and union members.

Apprenticeable occupations generally are defined as those occupations for which (a) skills are primarily learned through a combination of on-the-job training supplemented by related technical instruction, (b) at least 2,000 hours of work experience plus related instruction are required, (c) manual, mechanical or technical skills that are practical industry-wide as a recognizable trade or craft are involved, and (d) only selling, managerial, clerical or professional activities are not primarily involved. There are more than 750 apprenticeable trades or crafts, including such occupations as machinist, plumber, fire medic, x-ray technician, die maker, water treatment plant operator, electrician, millwright and printer.

The two parties most intimately involved with apprenticeship programs are individual apprentices and program sponsors. Sponsors can be individual employers, groups of employers, or combinations of employers and unions called joint labor management apprenticeship committees or Joint Apprenticeship Committees (JAC). The sponsor sets policy concerning the conduct of the program, which includes selecting and indenturing apprentices, supervising training, establishing training curriculum and certifying apprentices as journeyworkers upon completion of the program. Formal selection procedures take into account equal opportunity provisions of federal and state law.

In addition to employers and joint labor management apprenticeship committees, other groups and organizations involved in apprenticeship include:

The Bureau of Apprenticeship and Training, (BAT),
U.S. Department of Labor

Federal Committee on Apprenticeship, (FCA),
Secretary, U.S. Department of Labor

State and Territorial Apprenticeship Agencies/Councils (SACS)

National Employer Associations, and

International Labor Organizations

The federal role is to promote labor standards that safeguard the welfare of apprentices and to guide, improve, and assist apprenticeship. The BAT maintains a field office in every state and works with employers, unions and state apprenticeship agencies to develop programs and devise ways to give better training. The bureau approves and registers programs, provides technical assistance to employers on training, and searches out new ways to expand apprenticeship. The FCA is an advisory committee, appointed by the Secretary of Labor, and representing management, labor and the public. The FCA advises the Secretary of Labor on concerns such as expanding apprenticeship in all sectors of the economy, increasing the effectiveness of equal opportunity programs, promoting labor standards to protect apprentices, and strengthening cooperative relationships with state apprentice and training agencies (Rice, 1982).

State and territorial apprenticeship agencies are established in 31 states and territories. These agencies receive policy guidance from an apprenticeship council composed of employer, labor and public representatives. These councils devise and oversee procedures for recognizing apprenticeship programs in the states. A number of the state agencies have staff to help employers and unions develop, expand and improve apprenticeship programs. State agencies work in cooperation with the federal bureau, and use the BAT standards as the minimums for establishing programs but may add other state requirements. The BAT wholly operates and administers the apprenticeship system in 22 states.

National employer associations (e.g., the Associated General Contractors) and international labor organizations (e.g., Society of Operating Engineers) operate in a number of trade areas. These groups develop standards for their trades that serve as guidelines for local affiliates to develop and conduct programs and provide them with information on need for apprenticeship, materials, changes in technologies and training methods.

Registration of local programs is done at the request of program sponsors when certain basic criteria are met. Registration means formal recognition of a program by a state apprenticeship council or by the federal Bureau of Apprenticeship and Training. In FY 1985, 320,000 apprentices received training through about 45,000 registered programs, according to the BAT (Report of the Director.... 1986).

C. Apprenticeship's Potential Role in School to Work Transition for the Handicapped

Since the late 1970's, the Office of Special Education and Rehabilitative Services in the Department of Education has focused increasing attention on the needs of handicapped students exiting secondary special education programs. This effort, in part, led to the inclusion of specific provisions on transitional services in the 1983 amendments to the Education of the Handicapped Act (P.L. 98-199, December 2, 1983), and the articulation of this new policy initiative (Will, 1984).

Professionals in the fields of vocational special needs (Conaway, 1985), vocational rehabilitation (Kallsen and Kidder, 1985; Wehman, Wood-Pietruski, Everson, and Parent, 1985), and special education (Rehab BRIEF, 1984; Hippolitus, 1986; Helia, 1985; Rehab BRIEF, 1985; Bellamy, Wilcox, Rose, and McDonnell, 1985; and Nelson, Fischer, and Rubenstein, 1985) have responded positively to this initiative. They have sought to plan constructively how the total service delivery system for handicapped individuals can operate more cooperatively and more effectively, with each other and with the employer community. In this project, special emphasis was given to apprenticeship's potential role in this transition process.

Apprenticeship programs have at least two features which support the participation of handicapped individuals. Apprenticeship programs provide employment and income during the training period, an approach often referred to as "earn while you learn." This feature provides handicapped students, who often have limited access to financial resources, a good base of economic support. This may be especially true for individuals who may not qualify for any type of disability income.

Another feature is apprenticeship's emphasis on instruction which is primarily on-the-job training. This approach to training handicapped persons is recognized as an effective method in cooperative work preparation (Rehab BRIEF, 1983), for training high school special education students (Moller and Gugerty, 1984), and in a variety of industry-education collaborative efforts (Phelps and Treichel, 1983).

Research and demonstration activities have shown that apprenticeship and pre-apprenticeship programs can serve an effective role in the school to work transition process (Darin and Williams, 1982; and, Martin, Williams, and Darin, 1981). However, access to apprenticeship is an area of concern. Cobb and Larkin (1983) found that while apprenticeship programs have been inaccessible to handicapped persons, recommended changes could make them better able to meet the needs of the handicapped.

D. Summary of Major Findings

The major findings and recommendations of this study are:

1. The number of handicapped persons participating in apprenticeship represents less than 2%, and quite probably less than 1%, of the total apprentice population.

2. State coordinators of vocational special needs education, state directors of special education, state directors of vocational rehabilitation, representatives of state apprenticeship councils/agencies, national associations and organizations, members of the Federal Committee on Apprenticeship, and Regional Directors, Bureau of Apprenticeship and Training were able to identify factors that facilitate handicapped persons' access to apprenticeship and barriers that inhibit access.

3. Education and rehabilitation professionals tend to relate facilitating factors and barriers to systemic features of the apprenticeship system, whereas representatives of apprenticeship tend to see these more in terms of characteristics of individuals and requirements of the trades.

4. Available statistical and descriptive information on handicapped persons' participation in apprenticeship is limited, anecdotal, related to a special project, or simply not available.

5. The BAT's Apprentice Management System (AMS) can be modified to improve information on handicapped participation. A system, such as the one now used in New York State, should be incorporated into the Bureau's AMS.

6. Seven different apprentice programs were documented in four project site visits which provide information on successful efforts to serve handicapped persons in apprenticeship. Program personnel and administrators should review these site visit reports for potential replication.

7. A strong effort in public relations needs to be made to inform employers, education and rehabilitation professionals, union representatives, parents of handicapped students, handicapped individuals, and the general public of the opportunities for handicapped persons in apprenticeship.

8. Apprenticeship (and pre-apprenticeship) programs can be effective ways of transitioning handicapped students from school to work. Apprenticeship should be used much more extensively for this purpose.

9. Inter-organizational coordination and communication among apprenticeship councils, special education, vocational rehabilitation, vocational special needs, union representatives and employers are priority needs if the handicapped are to benefit fully from apprenticeship.

10. Policy and program development initiatives need to emphasize thorough dissemination of the laws, bringing more occupations (accessible to handicapped) into the apprenticeship system, and marketing/promotion strategies that focus on the incentives for both employers and handicapped individuals to participate.

11. Future research efforts in this area should identify and document apprenticeships that have served the handicapped successfully, and examine incentives and disincentives of apprenticeship and hiring the handicapped.

## II. CONDUCT OF THE STUDY

### A. Project Methodology

There were four major activity components to the project. They included: (1) examination of extant data; (2) generation of new information; (3) preparation of the state-of-the-art report; and (4) dissemination and utilization of the study findings. Each of these four components is described below.

#### 1. Review of Extant Information

This activity component of the project involved identification and review of all existing information pertaining to the research topic. A directed ERIC search was done in preparation for the original proposal submission. Following project initiation, a comprehensive search of ERIC and other computerized data files (e.g., REHAB-DATA), literature review of current information sources such as professional conference proceedings, psychological and rehabilitation literature, review of recently completed and on-going research and demonstration projects, and review of federal and state information systems and data bases completed the review. Of particular significance were Projects With Industry programs, Regional Research and Training Centers, and OSERS transition projects at both secondary and postsecondary levels.

#### 2. Development of New Information

Because our initial analysis had shown there were limitations to available information on the topic, we devised several strategies to generate new information. These strategies included selected interviews, mail and telephone surveys, site visitations and structured meetings. In-person and telephone interviews were conducted with selected federal and state program representatives (in apprenticeship, vocational rehabilitation, special education, and vocational-technical education), with representatives of national management groups and international labor unions involved in apprenticeship programs, and members of the research and development community doing work in this area.

Mail and telephone surveys were used to establish a broad base of information on the topic. These were directed toward formally organized agencies and organizations including the following six groups: (1) State and Territorial Apprenticeship Agencies and Councils; (2) State Personnel responsible for vocational education for handicapped, disadvantaged, and limited English proficient persons; (3) State Directors of Special Education; (4) State Vocational Rehabilitation Agencies (General, Blind); (5) Members, Federal Committee on Apprenticeship and Regional Directors, Bureau of Apprenticeship and Training (BAT); and (6) national management and labor organizations and officials promoting apprenticeship and training.

The resources of the project necessarily limited the depth and extent of information obtained via the mail survey. The survey, brief and general, did yield very useful information on the identifi-

cation of issues and concerns, current program status, and exemplary programs and practices.

The mail survey questionnaire used a general format which was modified slightly for each of the six groups surveyed. Background information on "Who Are the Handicapped?" and "What Is Apprenticeship?" was provided in the questionnaire package to give respondents a common base of information, definitions and terminology, to guide their responses. The general format requested information in eight areas: (1) estimates of the number of handicapped persons participating in apprenticeship and pre-apprenticeship programs; (2) available descriptive and statistical information on handicapped participation; (3) descriptions of management information systems; (4) specific information maintained on handicapped persons in apprenticeship; (5) state/federal guidelines related to access of handicapped persons to apprenticeship; (6) identified incentives; (7) identified barriers; and (8) recommendations to improve access. In addition to these information areas, respondents were asked to nominate exemplary programs in their states or regions. The responses to the survey varied by group, but in all cases fell below the targeted minimum of 60%. The response rates varied from 40% to 55%, despite the use of a follow-up mailing to non-respondents to the initial mailing. Table II-1, Summary of Mail Survey Responses, shows the number of returns compared to the number mailed and the response rates for each group.

From the information received from survey respondents, a list of programs nominated as exemplary was compiled. Phone contacts were made with each program to obtain additional information.

Site visits were made to four exemplary state and local programs, selected to represent the range and variability of successful programs found in the study. The purposes of the site visits were to obtain information first-hand on the exemplary programs and practices and to prepare descriptions of these efforts for inclusion in the state-of-the-art report. A nine page "guide for program site visits" was prepared and used by project staff in conducting each site visit. Chapter III, Section D includes brief descriptions of these programs. Sufficient information is provided to guide replication of these exemplary efforts.

Following the examination of extant data and the generation of new information, a preliminary report of study findings was prepared. Representatives of federal and state programs, national management groups and international labor unions were invited to attend a round table session to discuss the preliminary report of study findings, and to identify and assess their implications for policy and program development and future research. As earlier tasks of the project were completed, project staff identified key individuals for participation in this round table session.

TABLE II-1

Summary of Mail Survey Responses

| | Mailed* | Rec'd. | Response Rate |
|---|---|---|---|
| 1. State Personnel Responsible for Vocational Education for Handicapped, Disadvantaged and Limited English Proficient Persons | 56 | 28 | 50% |
| 2. National Organizations and Officials Promoting Apprenticeship and Training | 102 | 44** | 43% |
| 3. State Apprenticeship Agencies and Councils | 31 | 17 | 55% |
| 4. State Directors of Special Education | 59 | 30 | 51% |
| 5. State Vocational Rehabilitation Agencies (General, Blind) | 84 | 34 | 40% |
| 6. Members, Federal Committee on Apprenticeship and Regional Directors, BAT | 24 | 10 | 42% |

*Included an initial mailing plus one follow-up mailing to non-respondents.
**Included 32 responses indicating "not applicable."

Those participating in the round table session were:

Mr. Ambrose Bittner
Chief of National Program Coordination and Training Group
National Bureau of Apprenticeship and Training
U.S. Department of Labor

Mr. Charles E. Bradford
Director of Apprenticeship, Employment Training and Rehabilitation Programs
International Association of Machinists and Aerospace Workers

Dr. Donald M. Clark
Project Director
National Association for Industry-Education Cooperation

Ms. Rosanne Hammes
Transition Specialist
Program Development and Assistance Branch
Division of Special Education
Maryland State Department of Education

Dr. Richard P. Melia
Project Officer
U.S. Department of Education
Office of Special Education and Rehabilitative Services
National Institute of Handicapped Research

Mr. Minor R. Miller
Assistant Director
Bureau of Apprenticeship and Training
U.S. Department of Labor

Dr. Eric M. Rice
Consultant
Middletown, MD

The session was structured by use of the nominal group technique process (Delbecq, Van de Ven, and Gustafson, 1975). The nominal group process maximizes participant involvement, focuses the group's attention to specific issues, problems or areas, leads to the generation of a large volume of information relative to energy expended, and provides a mechanism for placing items in priority with a high degree of consensus. The output of the structured meeting was incorporated into Sections C and D in Chapter IV of this final report, Implications and Recommendations.

3. State-of-the-Art Report

Preparation of the State-of-the-Art Report was done in two phases. The preliminary report, including findings, methodology, and purpose, was used as input to the structured round table session described above. Following the round table session, implications for policy and program development and future research were determined and included in the final report.

4. Dissemination

Dissemination activities focused on two areas: (1) distribution of information about the project while in process, and (2) sharing the results and findings of the study with the industry-education community. A project brochure (500 copies) was prepared early in the project and used to announce the study and generate interest and participation in it. The National Association for Industry-Education Cooperation, through its newsletter, "showcase" conferences and direct mailings was able to insure the brochure received wide distribution. The results and findings of the study (i.e., this report) was done through distribution of 400 copies nationally to professionals and organizations in special education, rehabilitation, vocational education, apprenticeship and advocacy organizations.

B. Limitations

This study was limited by several factors. An obvious one, of course, is that agencies and organizations involved in apprenticeship do not collect or have information on actual numbers of apprentices with handicapping conditions. Estimates of the numbers served, in most instances, are indeed just that. The study design and questionnaires recognized and allowed for this.

The response to the mail survey, the principal information gathering strategy used in the study, was less than expected overall, and considerably lower among some professional groups. Limited project resources prohibited any type of follow-up with the non-respondent group. Therefore, it may not be safe to assume that respondents were representative of all agencies and organizations surveyed.

There was extreme variability in knowledge about one another found among the groups, e.g., some special education and rehabilitation agency representatives knew little about apprenticeship, while some apprenticeship representatives seemed to know little about the handicapped. A high frequency response to many survey items was "don't know." A few representatives, on the other hand, seemed to be well informed. A point to be made here, then, is that respondents were operating from very disparate information bases. In many cases, responses may be characterized more as general personal perceptions than informed professional judgments.

## III. FINDINGS OF THE STUDY

The responses to the mail survey questionnaires were grouped according to types of agencies or organizations, and are presented in Tables III-1 through III-6 (beginning on page 30). As noted earlier, the questionnaires followed a similar format, and some questions were asked in the same manner of all groups. However, because of differences in responsibilities and perspectives, other questions were modified or added to tailor them to a particular group. Discussion of these responses follows in the next four sections of this chapter and in the next chapter dealing with implications and recommendations.

### A. Participation of Handicapped in Apprenticeship

Respondents involved in apprenticeship indicated that handicapped persons were involved "not at all" or "very little" in apprenticeship and pre-apprenticeship programs. In these two categories combined, were placed from 50% to 64% of respondents among the three groups. Only among FCA members and BAT Regional Directors did a high percentage of respondents agree that handicapped persons' participation was greater than 2%. Among the rehabilitation, vocational and special education groups, there were even higher percentages of agreement that handicapped students' participation was "not at all" or "very little." These percentages ranged from 91% among vocational rehabilitation leaders to 74% among special educators.

It may be said that the participation of handicapped is minimal, definitely less than 2%, probably less than 1%. One state apprenticeship council reported statistics indicating 26 out of 15,776 (0.16%) apprentices served were handicapped. Other agencies and organizations citing handicapped apprenti[illegible]s reported only anecdotal information involving 1 or 2, or a very small number of individuals.

The responses of state special education directors and state coordinators of vocational special needs programs indicated that apprenticeship was not being used to facilitate transition from school to work for handicapped students. Indeed, the vast majority of vocational special needs coordinators (79%) did not feel that their secondary and postsecondary programs are being coordinated with apprenticeship.

### B. Factors that Facilitate Participation (Access)

The survey questionnaires asked two questions which pertained to the issue of access to apprenticeship by handicapped persons. One question asked for an indication of agreement or disagreement with the statement that "existing state/federal/organizational guidelines and standards facilitate access...." Agreement with this statement was highest among members of the Federal Committee on Apprenticeship and BAT Regional Directors (50%), and lowest among state vocational rehabilitation agencies (14%). Disagreement with this statement was highest among state directors of special education (30%) and lowest among members of the Federal Committee on Apprenticeship and BAT Regional Directors. The most consistent pattern across all six groups, however, was the predominant response, "don't know." This suggests, and

suggests strongly, that among the professional communities included in this survey, there was considerable uncertainty and confusion.

A second question asked survey respondents to identify incentives that encourage the use of apprenticeship by handicapped persons. Incentives include legislation and regulations, administrative policies, as well as characteristics of programs and persons. State apprenticeship councils/agencies, members of the Federal Committee on Apprenticeship, and BAT Regional Directors identified federal and state legislation and programs providing such incentives. These included:

- Equal Employment Opportunity regulations
- The Rehabilitation Act of 1973 (P.L. 99-506, Rehabilitation Act Amendments of 1986, was signed into law on October 21, 1986)
- Executive Order 11914 (April 28, 1976) and proposed regulations (January 4, 1980)
- Wyoming's Fair Employment Practices Act
- Hawaii's Employment Practices Law
- New York Department of Labor regulations on equal employment opportunity in apprenticeship training.
- BAT's past promotional efforts
- Puerto Rico's cooperative financial support program for employers, which is a joint effort of the Right to Employment Administration and Vocational Rehabilitation
- JTPA funding policies
- Targeted Jobs Tax Credit

Only a few of the respondents among these groups were unable to identify any incentives or felt that none existed.

One group which clearly saw incentives as counterproductive was the one composed of national organizations and officials promoting apprenticeship and training. Use of federal funds to support apprenticeship or training, e.g., stipends to industry, was not encouraged. Provisions in state/federal legislation for specific target population groups may actually discourage apprenticeship, according to one of these respondents.

Among vocational education, special education, and vocational rehabilitation professionals, important incentives which were identified included:

- Vocational Rehabilitation subsidies
- Stepped up wage schedules which start at less than minimum wage
- Section 503, Rehabilitation Act of 1973, as amended
- Projects With Industry (PWI) programs
- Federal laws which prohibit discrimination and require reasonable accommodation
- Tax credits
- Amendments to P.L. 94-142 regarding transition
- Wage reimbursements

A general feeling expressed by persons in these groups was that legislation, regulations, guidelines and standards don't preclude the handicapped from participating in apprenticeship, but they don't necessarily promote it either.

Other incentives which were cited related to specific program initiatives, attitudes and abilities of handicapped persons, and the enthusiasm, commitment, and support of agency professionals and employers. For example, handicapped persons' desire to learn and work hard and their proven dependability were cited.

C. Factors that Inhibit Participation (Barriers)

Survey respondents were asked to identify barriers to handicapped participation in apprenticeship. Barriers included such categorical areas as attitudes, program policies and practices, architectural barriers, and communications barriers (Rice, Hughes, Lowman, Etheridge, Laslett, and Mace, 1981). The responses to this question were quite varied. There was a slight tendency, however, for those most familiar with apprenticeship (e.g., state advisory councils, BAT Regional Directors, FCA members, and national organizations) to see barriers as related to handicapped individuals' limitations or the demands of the job. Concerns over job safety and competition with non-handicapped were raised. Education and rehabilitation service providers, on the other hand, showed a slight tendency to look more at structural, systemic, or attitudinal barriers. For example, among those cited by these groups were: economic conditions in a given community, insurance requirements, public schools' educational programs, lack of inter-agency cooperation and communication, examination and entrance requirements, and attitudes and practices of labor unions.

Many of the barriers identified in the survey reflected very astute judgments and insightful observations. These are illustrated in the selected barriers listed below:

- competition from non-handicapped, experienced workers who are also looking for employment
- physical requirements (climbing, lifting) and mental abilities (mathematics and mechanical comprehension) associated with many apprenticeable trades
- limited knowledge of apprenticeship among education and rehabilitation professionals
- lack of effective linkages and communication between private industry and community training programs and local education agencies
- attitudes by handicapped individuals regarding college as the only choice
- poor preparation of the trainee

D. Adequacy and Utilization of Information Systems

1. Available Descriptive and Statistical Information.

Survey questionnaires mailed to state apprenticeship councils/agencies, national organizations and officials, state coordinators of vocational special needs programs, state vocational rehabilitation agencies, and state directors of special education requested information on handicapped persons participating in apprenticeship and pre-apprenticeship programs. In the majority of responses, information was not available, was anecdotal, was related to a special project, or was very

limited/incomplete.

Two apprenticeship agencies did report comprehensive information, one indicating the numbers of handicapped apprentices as part of the total number of registered apprentices. Puerto Rico, which reported the highest number of handicapped persons served (84) in apprenticeship, gave special attention to the handicapped in employment and training programs and maintained reporting on them. New York reported the number of handicapped apprentices registerd as part of their total program, as well as exit status. State coordinators of vocational special needs programs should have had access to data on persons participating in programs of related instruction, but only two survey respondents referred to this information.

2. Apprenticeship Management Information Systems.

State apprenticeship councils/agencies and national organizations promoting apprenticeship were asked to describe their management information systems and to indicate if and how specific information on the handicapped was included. Some states continued to rely on manual systems, while others had converted to computerized systems, and still others were in the process of making this conversion. Some state councils relied solely on the Bureau of Apprenticeship and Training, while others supplied information to BAT and also had their own information system. Few of the national organizations maintained their own records, preferring to rely on the BAT, or having such records maintained at state or local levels.

Only a handful of state agencies and national organizations maintained and reported handicapping conditions of apprentices. Some reported collecting this information, e.g., on the application form, but did not include it in their reports. New York's Department of Labor maintained and reported information on apprentices which identified whether or not the individual was handicapped. Specific type of handicapping condition was indicated, using a list of 70 3-digit codes based on location of disability: (1) upper extremities; (2) lower extremities; (3) trunk, spine, and abdominal defects; (4) vision, hearing, and speech; (5) cardiovascular; (6) respiratory except asthma; (7) neuromuscular (widespread paralysis or muscle disfunction of brain or spinal cord origin); (8) neuropsychiatric; (9) skin, cosmetic, and allergy; (10) generalized or systemic diseases, including diseases of the blood; (11) gastrointestinal; (12) genito-urinary; and (12) miscellaneous disabilities. The New York department was able to report tabular information as follows:

- Active Apprentices with trades by veteran status, ethnic group, sex, and handicapped status.
- New registrations--apprentices and programs--within trades by veteran status, ethnic group, sex and handicapped status.
- Apprentice exits within trades by exit status (completed or other than completed: military service, quit, layoff and other, transfers), veteran status, ethnic group, sex, and handicapped status.

Among the state apprenticeship councils/agencies responding to the study questionnaire, New York presented the most complete information

system on apprenticeship which included detailed information related to participation of handicapped persons.

At the federal level, the Bureau of Apprenticeship and Training's information system has undergone several changes over the past twenty years. During this period, information on handicapped persons has been reported at times, and not reported or even collected at others. Presently, information on the handicapped is not addressed.

In 1969, 1970 and 1974, the Bureau of Apprenticeship and Training conducted surveys of registered apprentices.* Using a self-report forms the survey questionnaire asked apprentices to indicate whether or not they had a physical handicap (undefined). The results were as follows:

| YEAR | REGISTERED APPRENTICES | PERCENT WITH A PHYSICAL HANDICAP |
|---|---|---|
| 1969 | 360,000 | 8% |
| 1970 | 375,000 | 8.1% |
| 1974 | 393,000 | 3% |

The survey reports did not break the information down further, e.g., types of physically handicapping conditions, nor did it relate apprentices with physical handicaps to other information such as age, education or trade.

During the 1970's, the Bureau maintained the State-National Apprenticeship System on registered apprentices, referred to as SNAPS, but it did not contain information on handicaps. This system was discontinued in 1981. The Bureau then developed and implemented a new data system called RARES, Regional Automated Record Entry System, in Region V.

Over the past several years, RARES was expanded into a system serving both regional and national clientele. Effective October 1, 1985, the title of the system was changed to the Apprenticeship Management System (AMS). AMS, which now serves ten regions and the national office as well as providing for data from the State Apprenticeship Councils, was redesigned to meet the Bureau's current and projected future apprenticeship needs.

According to the Director, BAT, at the end of FY1985 about 68% of apprenticeship programs and about 55% of apprentice data were stored in AMS. The Bureau is continuing to arrange for including data from other SAC states which for various reasons are not yet supplying their detailed data (Report of the Director...., 1986).

The AMS system maintains detailed records of data on approved apprenticeship programs and registered apprentices. The system can provide summary data on programs by industry, geographic area and other factors and on apprentices by occupation, sex, ethnic origin, veteran status, and other pertinent categories.

*Personal Communication, Nicholas A. Kolb, Bureau of Apprenticeship and Training, June 19, 1985, and October 18, 1985.

The system allows for an indication as to the presence or absence of a handicapping condition, and for type of handicapping conditions, but at the present time such information is not being entered.

At the federal level, then, the data base on registered apprentices has been incomplete in regard to the handicapped, both in terms of adequacy of content and of time span coverage. Recent efforts, namely AMS, bode well for a better information system in the future, with inclusion of information on the handicapped being feasible.

## E. Exemplary Programs and Practices

Project staff conducted four site visits to programs which were identified through the mail survey and other sources as examples of exemplary programs and practices. Thirty-eight programs were nominated. Four were selected as representative of the variety and types of apprenticeship programs serving the handicapped which were nominated. The selected programs also provided some diversity in terms of local versus state, school to work transition emphasis, types of program sponsor, related instruction, and other factors. The four programs included:

1. A postsecondary educational institution, affiliated with a national professional association, which provided the related instruction and coordinated the placement for employment as apprentices for its handicapped students;
2. A small, employer-sponsored program which employed hearing impaired apprentices in the machinist and tool and die trades; this program used a local community college for related instruction and other support services;
3. A Projects With Industry program, sponsored by an international association, which assisted disabled workers in finding employment in all fields of occupations and when possible in apprenticeship programs; and,
4. A coordinated program effort between a state apprenticeship council and department of vocational rehabilitation which provided technical assistance and funding subsidies to employers training handicapped persons through apprenticeship.

Descriptions of each of these four programs follows. The reader should note that the descriptions are based on the programs' operations at the time site visits were made.

### Southeast Institute of Culinary Arts
### Apprenticeship Program

An exemplary apprenticeship experience is being afforded handicapped students at the Southeast Institute of Culinary Arts in St. Augustine, Florida. The Institute is affiliated with the American Culinary Federation, Inc.

The Institute, a division of the St. Augustine Technical Center, provides career opportunities in the culinary arts profession in Florida and elsewhere in the nation. Students can receive college credit for completing the Culinary Arts program through courses of study at St. Johns River and Daytona Beach Community Colleges.

The requirements for both certificates and diplomas awarded to handicapped and other students are based on completing the competency objectives in each program area, which are tabulated on each student's competency chart and maintained in the individual's folder. Students progress at their own pace in attaining program competencies.

The 2160 hours suggested for program completion are based on the average learner, with each graduate actually being enrolled for more or less hours depending on their learning rate, previous knowledge and experience.

There are areas of instruction in this state funded institute which include a core curriculum -- e.g., computer literacy, nutrition, safety -- preparing fast food, pantry items, cafeteria food and bake shop. Students specialize in one area after completing the program; yet, they are functional in all areas. Special learning needs are accommodated following testing by the guidance department at the Center. This helps handicapped individuals determine their academic ability to function in various vocational programs. Depending on the outcome of this testing, which includes an assessment in basic skills, prior to admission, students may be referred to the Developmental Skills Lab for remediation at the time they are scheduled for class entry.

All students are evaluated on their academic progress on a daily basis by the instructors. Handicapped and other student apprentices are evaluated weekly on their job performance and a daily log book is maintained and signed by the employer while they are on apprenticeship duty which consists of a total of 6000 hours. Job rotation is designed so that students attain all the competencies required in the program.

On-the-job training areas have state-of-the-art equipment. As an apprentice, all students must join the local chefs association ($20) as junior members.

Students entering the Culinary Program must be 18 years of age or older and have a high school diploma or equivalent; however, the school will assist students in reaching the required academic levels for the program. Only full-time students are accepted in this program. The one limiting factor for disabled students is being excluded from the kitchen activities if the individual is physically handicapped in a wheel chair.

All students are interviewed by Louis R. Oakes, Executive Chef Coordinator at the Institute, followed by an individual progress check after 30 days. The employment background of the student body represents diversity in occupations -- a number of students are changing fields and careers -- applicants include accountants, nurses, comptrollers and those with an electronics background. Of the total student body, 60% reside in Florida; 40% are from out of state.

Approximately 50% of the students enrolled in the Institute and its apprenticeship program are handicapped, e.g., learning disabled, hearing impaired, and legally blind. The physically disabled account for 10% of the handicapped students. All Institute staff members have been in-serviced on special needs students.

The Institute meets the Florida requirements for the education and training of the handicapped and follows the federal law on the criteria, procedures, and selection of apprentices from among the qualified applicants. There is a 20 to 1 student/instructor ratio. Each faculty member volunteers five to six hours a week in addition to their regular duties in providing more individualized instruction for handicapped students. It is the multiple handicapped student that takes considerable time and supervision, particularly in the first 90 days when additional staff are required in helping the student adjust to the program.

The 6000 hour apprenticeship program consists of a 40 hour week work schedule. There is a probationary period of 90-180 days; up to 3500 hours can be credited for prior related work experience or training; the wage scale ranges between $5 to $11 per hour and employers are asked to provide a complete benefit package -- e.g., sick leave, vacation, major medical -- for the apprentice. Interviews with employers revealed satisfaction with the handicapped apprentices in terms of their punctuality, reliability, interpersonal relations, motivation, desire to handle increasing levels of skill responsibilities, and job performance in general.

Upon completion of the program, the individual's status is "journeyman cook." If a student transfers between trades, he/she will only receive credit for the employability skills component (30 hours). The grounds for termination in the apprenticeship program are voluntary withdrawal or involuntary reasons such as the lack of attendance, progress and a desire to learn.

The services provided to improve the completion and retention of qualified handicapped apprentices in the program include individualized tutoring and training, remedial labs, availability of the 12 full time instructional staff members trained in the area of special needs students and instructional/physical modifications. There is no formal extra curricular activity program at the Institute. However, students pursue social/civic activities through the local chefs association, Kiwanis, Rotary, and the Chamber of Commerce; and special events such as the black tie dinner for the governor and state legislators.

Forty percent of those who enter the program graduate; 80% are employed by industry; and there is a 100% placement rate which includes higher education and the military. (Florida has a 70% mandated placement rate for performance based contracts involving disadvantaged/handicapped individuals.) All qualified applicants are acceptable to employers except where an employer is unable to handle a handicapped person due to the limitations in a specific working situation.

Economic benefits to employers participating in the Institute's apprenticeship program involving handicapped individuals include tax breaks and training support under the Job Training Partnership Act.

The Institute needs to: improve its facilities (it has outgrown the current complex); upgrade and add special areas to serve the handicapped; solicit funding support for establishing a pilot program focusing on two specialized centers for handicapped individuals; and develop better coordination through state and national agencies for the training of the handicapped.

The Institute's staff is available to help replicate the handicapped apprenticeship program for any agency/organization interested in sponsoring this type of activity.

The St. Augustine Technical Center is accredited by the Southern Association of Colleges and Schools, Commission on Occupational Education Institutions. In 1984, the Institute received President Reagan's Award recognizing it for outstanding coordination and cooperation in working with private business and industry.

For additional information on the Institute's handicapped apprenticeship program, contact: Louis R. Oakes, C.C.E., Executive Chef Coordinator, The Southeast Institute of Culinary Arts, Collins Avenue at Del Monte Drive, St. Augustine, FL 32084.

J.G. Tool and Die Apprenticeship Program

Handicapped individuals have been participating in a tool and die maker apprenticeship program developed jointly by the J.G. Tool and Die Company in Baltimore, Maryland and the Catonsville Community College (CCC) in Baltimore County. The program is approved by the Maryland Apprenticeship and Training Council and the Federal Bureau of Apprenticeship and Training.

An employee who desires to complete the program -- apprenticeship and academic -- must enter into a contract with the employer on the commitment that is required. The program leads to being certified as a registered journeyman tool and die maker.

The related academic instruction is provided by the CCC. It is a four year program (165 hours each year); the first two years are related studies instruction for a machinist apprentice and the third and fourth years for tool and die maker. Employers are not charged college tuition fees; the State covers the handicapped apprentices enrolled in the related instruction at the College.

The College faculty in this program has the formal educational training, technical background, and work experience to include supervision. The staff consists of 100% adjunct faculty.

There is a 12,000 hour requirement for on-the-job training (OJT); most students receive a year's credit. The J.G. Tool and Die Co. participants are deaf. As a result, the College provides interpreters. The two current company apprentices are evaluated by the College in terms of independence, classroom participation, homework, and regular testing. A formal cumulative file is kept for each student. The CCC provides the instruction on the course theory - the company is responsible for the OJT.

James Griel and other small business owners are college adjunct faculty teaching in the tool and die apprenticeship program. The job processes covered in the instruction are consistent with the curriculum of the National Tooling and Machinists Association (NTMA).

At the company site, apprentices are rotated at different types of ma-

chinery stations. The apprentices are required to put in a specific number of hours on each machine. In addition to the interpreters for the deaf at the College, Mr. Griel has developed a sign language capability in a Red Cross course which helps him communicate with the deaf apprentices in the company.

The handicapped apprentices are evaluated by the company every six months in terms of safety, cooperation, attendance, job performance and attitudes. The company has the handicapped employee formally registered as an apprentice. OJT is conducted in an industrial setting with state-of-the-art equipment; the College's is a first class facility.

A high school education is the minimal requirement for the company's apprenticeship program. The participant must be a registered apprentice and be able to use all equipment. The age, as an admission requirement for the program, varies with the company, and it is the company that establishes the specific duties and functions that must be performed. Previous work experience, as a requisite for entering this program, also varies with the company -- this does not enter into the apprenticeship program at the J.G. Tool and Die Co.

With respect to admission procedures, the J.G. Tool and Die Co. seeks individuals who have a vocational/technical education background and the College processes the handicapped students like all entrants. From the company standpoint, the most qualified person will enter the program, i.e., having the capabilities to carry out the duties of a tool and die maker, along with an aptitude for math and blueprint reading. The company provides employment opportunities for handicapped individuals if they are qualified and have the "right attitude."

A more detailed examination of this company apprenticeship program serving deaf persons is as follows:

- The usual work schedule is 40-48 hours per week; the probationary period is three months at the J.G. Tool and Die Co.; the College provides advance standing in the program for prior work experience/training; and the company gives credit for vocational/technical education along with previous work experience.

- The apprentice begins at a percentage of the journeyman's wages and receives the full journeyman's wages at the completion of the program. Apprentices receive a certificate as a journeyman (C) craftsman after having met the requirements of the program and their work toward upgrading their status to a (B) and (A) craftsman's level.

- The CCC requires the individual to be employed while enrolled at the College; if the company terminates the individual's employment, he/she is dropped from the College program. College termination can also result from a student disrupting the classroom environment. The J.G. Tool and Die Co. releases an apprentice if the individual is not performing up to his/her expected achievement level.

Special services provided the handicapped apprentices at the College consist primarily of the previously cited interpreters for the deaf. Mr. Griel plans to seek additional training in communicating with the deaf ap-

prentices. He trys to set up the machinery so that the handicapped do not need to rely on the hearing faculty, and he expects the other employees to develop a sign language capability in working with the deaf apprentices.

Extracurricular activities for handicapped students are available at the College. One of the deaf students at the company has been active in the College's theater program.

The CCC relies on a screening process that has resulted in a 100% retention and completion rate for this program, whereas the company has a two out of three retention/completion rate for its handicapped on-the-job training. The company's six month evaluation of the apprentices has been a significant factor in the success of the program. The benefits of this handicapped apprenticeship program to an employer were summed up by Mr. Grisl: "Disabled employees try very hard to perform well; they concentrate on their work, are reliable, accepted by other employees, can operate any machine; and have not resulted in any loss of productivity. The employer gains by getting a qualified employee."

Recommendations for continued program operation and improvement highlight the need to update and refine the scope and content of the CCC curriculum and for employers to first carefully assess the job opportunities available in the business, and then determine what type of disabled person can successfully carry out the duties and functions of a specific position.

Both handicapped apprentices at the company have a manufacturing processing certificate from the Rochester Institute of Technology. Mr. Grisl is going to encourage the NTMA to get involved with handicapped apprenticeship programs.

Those involved in this apprenticeship program at the College and the company state that it is highly transportable to other sites.

For additional information contact:

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Baltimore, MD 21215

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Catonsville Community College
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Baltimore County, MD 21228

IAM CARES
IAMAW District Lodge 751
Seattle, Washington

District Lodge 751 of the International Association of Machinists and Aerospace Workers (IAMAW), AFL-CIO, operates three programs in the Seattle labor market area to assist handicapped individuals to find jobs, especially in the aerospace, machine tool, and air transport industries. The three programs, all of which are under the umbrella of IAM CARES, are the Projects With Industry program (IAM/PWI), Transitional Services for Handicapped Youth, and the IAM/JOBS program.

District Lodge 751 receives referrals from its membership, employees, other unions, joint apprenticeship training committees, educational institutions, rehabilitation agencies, and individuals. Efforts are made to assist the individual, based on needs and qualifications, through one of the three programs. Individuals served include those with developmental disabilities, psychiatric disorders, hearing and visual impairments.

The Projects With Industry program's approach to vocational rehabilitation of the handicapped emphasizes the participation of the employer in the actual process of rehabilitation by providing training on the job. Through IAMAW's collective bargaining agreements with companies, union representatives as well as those of employers contribute to the rehabilitation of its clients.

Closely coordinated with the IAM/PWI activities in the Seattle area, the Transitional Services for Handicapped Youth Program provides a link between special education and the PWI network. The transitional services program works in conjunction with the public school systems, vocational rehabilitation agencies, and other public and voluntary agencies in the local area. Services are adopted to the needs of handicapped youths.

The IAM/JOBS program is organized to enable Social Security Disability (SSDI) beneficiaries interested in working to qualify for jobs to find suitable employment and become self-supporting. Involving the employer and organized labor in the rehabilitation process, the approach makes it possible for handicapped individuals voluntarily to exchange their tax-supported disability payments for regular pay checks and economic independence. Special counseling is given the handicapped individual to see the advantages of paid employment over SSDI benefits.

In working with handicapped persons through one of these three programs, District Lodge 751 considers the option of apprenticeship, when appropriate. In visiting this program in Seattle, project staff focused on two apprenticeship programs in which handicapped individuals had been placed. One program was the apprenticeship program at the Boeing Company, and the other was the King County Joint Apprenticeship Training Committee for Painting, Decorating, and Drywall.

The apprenticeship programs at Boeing are machinist, tool and die maker, model maker, and tool and cutter grinder. Each program is 8,000 hours or approximately 4 years except for tool and die maker which is 10,000 hours or approximately 5 years.

To qualify for apprenticeship in any of these skilled trades, employees within the Boeing Company must have mechanical aptitude and ability. Also, fundamental knowledge of arithmetic is essential. The ability to read, write and speak well is beneficial in these apprenticeship occupations. Knowledge of mechanical drawing, physics, blueprint reading, drafting, and higher mathematics is a decided advantage. The ability to work with others is essential. Apprentices must be at least eighteen years of age and have at least one year of work experience in their desired trade or, one year of vocational or college training in a related field. High school graduation or GED is mandatory, with a major in mathematics, shop or the physical sciences preferred.

The training is supervised by a Boeing Joint Apprenticeship Committee

(BJAC). The processes of the trade and the number of hours to be spent learning each process are "spelled out" in Boeing Apprenticeship Standards approved by the BJAC. The program is registered with the Washington State Apprenticeship Council. Apprentices start at a percentage of the journeyman's wage and receive increases at regular intervals.

Apprentices attend classes of related technical instruction at the Renton Vocational-Technical Institute. This instruction, supplementing the training on-the-job, gives each apprentice a comprehensive understanding of the theoretical aspects of their work. Apprentices are required to attend classes on their own time, 160 hours a year. The instruction includes such subjects as safety rules and regulations, mathematics, draftsmanship, blueprint reading and other sciences connected with the trade. In class, apprentices learn the theories of their trade; each day on the job they learn its practice, under the supervision of skilled journeymen. Instruction in the use of tools of the trade is also given apprentices early in their training. Apprentices are required to furnish their own hand tools.

Apprentices, in addition to their regular wages, receive fringe benefits covering vacation pay, health and welfare, pension and savings plans. A supervisor of apprenticeship is employed by Boeing to supervise the training of apprentices in the given trades, process apprentice applications, keep records of progress and the like.

Special learning needs of handicapped apprentices are accommodated by careful planning and assessment, job readiness training, job development and modification, placement and follow-up support services. Retest opportunities are available in the related instruction area which requires an 80% pass rate. Flexible scheduling of work can be arranged, e.g., as was done for one model maker apprentice who was a dialysis patient.

The Boeing Company apprenticeship program, which enrolls about 80 apprentices, has a very high retention rate. Only 1-2 persons leave the program each year. From the Company's perspective, the program's goal is to train persons in the overall knowledge of machine operations, providing for upward mobility, and developing long term benefits to the Company. A small number of handicapped apprentices with physical disabilities have been able to pass the rigorous selection process, which includes a personal interview, and meet the high demands of this program.

Another apprenticeship program which the Seattle IAM/CARES program works with is the Joint Apprenticeship Committee (JAC) for Painting, Decorating, and Drywall. Painting contractors in the area enter into union agreements to procure experienced journeymen and to train apprentices as well. About 10% of the membership are apprentices. Both the program and apprentices are registered with the Washington State Apprenticeship Council. This is a four year program of 8,000 hours of on-the-job instruction with an additional 144 hours per year of related instruction.

The King County area has about 15 large painting and drywall businesses and contractors and about 30-40 smaller operations. Craft instruction is provided by journeymen foremen on the job, selected by the companies. Training is given in basic painting, wood finishing, color mixing, decorating, blueprint reading, paper hanging, drywall finishing, sandblasting, spray

painting, special coatings, and ladders and rigging.

Sometimes, adequate rotations through all of these areas are difficult to to achieve due to increasing specialization and the fact that rotations among contractors are not permitted. Accommodating special learning needs on the job may sometimes be difficult, e.g., when an individual with a hearing impairment may be a safety factor. However, this program has been successful with individuals who had psychiatric disorders and physical handicaps.

The facilities and equipment used in the trade depend on the contractor, as some do primarily inside business offices, while others do large structures such as bridges, for example. Generally, commercial, industrial, and residential are the major classes of contractors.

Admission to this program requires that an application be submitted to the JAC coordinator. There are no age requirements nor physical examination required. High school diploma or equivalent is preferred. Individual applicants must secure their own jobs, which are then reviewed and approved by the JAC. The JAC will use the IAM/CARES office as a resource for applicants with disabilities. In the case of one apprentice who had a nervous breakdown and had to be laid off (would become physically sick in interpersonal situations), medical care was provided through IAM/CARES. Following treatment, this individual returned to work and completed his apprenticeship. He was a contest award winner in the area of wood finishing, and now specializes in wall covering.

The related instruction for this program is provided by local community colleges but administered by the JAC which makes the decisions on selection of instructors. Study materials relate to all of the work processes involved in the trade and were developed by the National Joint Apprenticeship Committee and Ohio State University. Each unit of instruction has a test packet and projects which apprentices complete. Special accommodations of handicapped apprentices include use of tape recorders, one-on-one instruction, interpreters for hearing impaired and foreign language speakers, and flexible homework assignments.

The JAC feels that it has had more successes than failures in working with handicapped apprentices, though the number of apprentices with disabilities has been small, probably less than 5%. The Committee feels that increased communication between handicapped service agencies, people in the trades, organized labor, and management (for example, through monthly luncheon meetings) will continue and improve these efforts.

For additional information on the IAM/CARES program in Seattle or either/both of the two apprenticeship programs, contact the following:

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## Puerto Rico's Coordinated Effort
## Right to Employment Administration
## and
## Program of Vocational Rehabilitation

In our survey of state apprenticeship councils/agencies, Puerto Rico reported the highest number of handicapped apprentices (84) among their apprenticeship population. There are two reasons for this. One is the aggressive pursuit of apprenticeship opportunities for handicapped persons by the Right to Employment Administration (Puerto Rico's apprenticeship agency) and the subsidy funding provided to participating employers by the Program of Vocational Rehabilitation, Department of Social Services.

Under Puerto Rico's plan, the Right to Employment Administration files all the paperwork, makes the eligibility determination, and prepares the apprenticeship agreements for apprentices and employers. The Right to Employment Administration (REA) may refer apprentices to employers or the employers may refer potential apprentices to REA for determination of qualification. REA can authorize the employer to pay a beginning hourly wage which is 75% of the Federal minimum wage. This beginning apprentice wage is then increased at certain intervals during the apprenticeship as the individual satisfactorily progresses to the journeyman level.

If the individual apprentice is handicapped, the Program of Vocational Rehabilitation may pay the employer, upon a written agreement, a subsidy ranging from $150.00 to $300.00 per month for the duration of the training arrangement. The amount of the subsidy is determined by a number of factors including the nature of the handicapping condition, the complexity of the trade, the length of the apprenticeship, number of apprentices, program retention rate, etc.

The Program of Vocational Rehabilitation, in addition to the funding subsidy, also provides medical services for the handicapped apprentice, job accommodation assistance for the employee, support services such as tutoring, instructional modifications, physical modifications, or minor changes in job rotations, as well as monitoring and evaluation of the training.

The project staff visited three apprenticeship programs in Puerto Rico: upholsterer, auto mechanic, and offset press operator and paste up apprentice.

Tapicería Wonderville is a small upholstery company which does upholstery work on chairs, couches, and automobile car seats. With twenty years' business experience, the owner reported ten years' experience in hiring handicapped apprentices.

The company facility is located adjacent to the owner's residence in Trujillo Alto, Puerto Rico. Two apprentices with physical and mental handicaps are employed. Combined with 5 handicapped apprentice graduates, they represent over 50% of the 13 person workforce. They learn how to operate industrial sewing machines and use the hand tools and materials which are part of the trade in a two-year, 4,000 hour apprenticeship.

Related instruction is integrated with the on-the-job training and is taught by the owner and supervisors on the job. Subject areas include safety procedures, basic mathematics and measurement, and upholstering terminology.

Supervisors are able to give individualized attention, specialized supervision, and frequent evaluations to insure success. Apprentices are evaluated through their job performance. There is at least one supervisor for each four apprentices. In addition to the on-the-job evaluations, the REA Apprenticeship Regional Program prepares evaluations with the employer who recommends apprentices for certification.

This upholstery apprenticeship program has no academic, physical, age, or prior employment requirements for admission. In order to be registered apprentices, applications with the REA need to be completed, and these applications are used to determine eligibility for payment of a sub-minimum wage. Credit can be given for prior related work experience or training, up to 50% of the 4,000 hour program. A 500 hour probationary period must be served, and failure to observe the rules and regulations of the company may lead to termination.

Retention and completion in the program are enhanced by periodic follow-ups made by REA field representatives, as well as support services provided by Vocational Rehabilitation. Tapicería Wonderville has experienced retention and completion rates between 90% and 95%. Program completers have proven the quality of their apprenticeship training by continued employment at Wonderville, with other upholstery companies, and, in one case, starting an upholstery business.

Manso Auto Repair is a shop owned by Alberto Manso who employs 5 mechanics. Two are apprentices and one is an apprentice graduate. The two apprentices are both certified handicapped, one being epileptic and the other mentally handicapped (mild mental retardation). Mr. Manso has been in the auto repair business over 30 years and reported that he has always hired apprentices. For the past 10 years, he has hired handicapped apprentices. He indicated general satisfaction with their accomplishments. He expressed personal satisfaction with the program. His only area of disappointment has been in working handicapped apprentices with behavior problems, which has caused him to have to fire or suspend some apprentices. On balance, he said he was very favorable toward the program.

The automobile mechanic apprenticeship is a two-year, 4,000 hour program with 288 hours of related instruction. The related instruction is coordinated through the Right to Employment Administration, which arranges for this instruction to be taught during off-hours at local vocational-technical schools.

The third program visited in Puerto Rico was the Rasallo Brothers Printing, Inc. located in Hato Rey. They sponsored apprenticeships in two occupa-

tions: offset press operator and paste up worker. The offset press operator program is a two-year, 4,000 hour program, and the paste up worker is a one year, 2,000 hour program. Supervisors in the areas in which the apprentices work provide the craft instruction, and evaluate the apprentices' job performance using Vocational Rehabilitation Training Progress Evaluation forms.

This employer has the most modern facilities and equipment in the printing industry in Puerto Rico on which apprentices can learn. These include all necessary machines, tools, materials, and equipment. They are also in the process of acquiring audio-visual aids for instruction.

Requirements for admission into these programs include basic academic skills; physical mobility in the press area, and good manual dexterity and eye/hand coordination in the paste up area; be of working age which is 16 or older; completed application form; and, demonstrate good social behavior and adjustment.

Referrals come from the Program of Vocational Rehabilitation, which interviews the applicants and assists them in the completion of the application forms. The completed application is given to the company Personnel Supervisor who interviews qualified applicants. A physical examination is given, and company testing in mathematics and Spanish is conducted. Personal documents are reviewed. Selection criteria emphasize the individual's performance during the interview, physical and written examination results, and motivation.

Apprentices have a three month probationary period, and can be given credit for prior experience. Opportunities to transfer from one trade to the other are available. Ramallo Brothers provides a nice wage and benefit package, including minimum federal hourly wage, 12 day annual leave with pay, sick leave with pay, medical plan with co-payment arrangement for first three years, and 100% company paid after three years, birthday off with pay, two days paternity leave with pay, and two days leave with pay for next of kin death. This company also has its own cafeteria and employee lounge, a recreational area, intramural sports and structured social activities programs.

Upon completion of apprenticeship, individuals become regular employees of the company. Grounds for termination during employment include alcoholism, absenteeism, drug addiction, poor performance, and lack of motivation.

The supervisors employ many different methods to help handicapped apprentices to succeed. They try to be flexible and deal with apprentices' problems on an individual basis. They request assistance from Vocational Rehabilitation as needed.

The company has accepted two apprentice referrals from Vocational Rehabilitation and placed them into apprenticeships, indicating their satisfaction with the applicant referrals. However, the retention rate has been zero, since both employees elected voluntarily to quit. The employer wanted to retain the two apprentices, but they left shortly before completing their training (short by two months). Ramallo Brothers has experienced a completion rate of 85% to 90% in other types of on-the-job training programs. They anticipate continuing to be involved in the program, and hope to see professional dissemination of the program's benefits among other employers. They

would like to see reduction in paperwork requirements to speed up the process.

The three Puerto Rico apprenticeship programs described above illustrate how well coordination at the state level can promote successful activities at the local level. A range of apprenticeship program options can be developed if the supportive structure, policies, and mechanisms are present.

For additional information on these programs, contact:

Mr. Alberto Esquilin
Tapiceria Wonderville
Urano Street #4
Trujillo Alto, Puerto Rico

Dr. Ariamendi Nunez S.
Personnel Supervisor
Ramallo Brothers Printing, Inc.
Duarte #227
Hato Rey, Puerto Rico 00917

Ms. Dorcas Hernandez-Arroyo
State Coordinator, Training Services
Program of Vocational Rehabilitation
Department of Social Services
P.O. Box 1118
Hato Rey, Puerto Rico 00919

Ms. Marie E. Malave
Apprenticeship Division Director
Right to Employment Administration
GPO Box 4452
San Juan, Puerto Rico 00936

**TABLE III-1**

Summary of Responses

State Coordinators of Vocational Special Needs Programs

(N=28)

1. Estimated extent to which apprenticeship (including pre-apprenticeship) is being used by state and local secondary vocational special needs programs to support the transition from school to work for handicapped students.

| | |
|---|---|
| not at all: | 15 ..54% |
| very little: | .....25% |
| to some extent: | 4.....14% |
| to a great extent: | 0.....0% |

2. Available descriptive and statistical information (e.g., numbers, types of handicapping conditions, occupations, etc.) on handicapped students' participation in apprenticeship and pre-apprenticeship programs.

- We work only with the trainable handicapped.
- Only adults are invovled in our apprenticeship programs.
- Virginia law says that an apprentice must be employed and he and his employer must enter into a voluntary apprenticeship agreement. No special records are kept re: handicapped and disadvantaged. If a person has a "handicap" and is employed in Virginia, he or she may have a handicapping condition, but they are employed and it is no longer a "handicap."
- I do not know of any specific activities....We really should have a comprehensive system in place for this.
- Information is available from local parish school systems - principally in the larger cities.
- State funded programs for related instruction served 3,354 apprentices during school year 1984-85. Of these, 1,926 received instruction in the Boston Public School System. Twenty-six percent of the Boston students were classified as special needs students. However, these special needs students were mostly economically or academically disadvantaged, with fewer than one percent reported as limited English proficient.
- At the present time there is a fedrally funded project proceeding in the Boston Public Schools, designed to provide counseling and support for 12th grade students on how to access apprenticeship programs. Approximately 200 12th grade students are to be served (25 handicapped, 135 disadvantaged, and 40 limited-English proficient).
- Types of handicapped persons (students) in pre-apprenticeship programs would include the learning disabled, educable mentally retarded, and socially-emotionally maladjusted. There is no available data.
- There are very few apprenticeship activities for the handicapped per se. However, several pre-apprenticeship programs are in operation such as work study, work experience, on-the-job training, cooperative education, job shadowing, etc.

3. Estimated extent to which apprenticeship programs are coordinated with state and local postsecondary vocational special needs programs for employment and training of handicapped students.

| | |
|---|---|
| not at all: | 15.....54% |
| very little: | 7.....25% |
| to some extent: | 3.....11% |
| to a great extent: | 1.....4% |

4. Available descriptive and statistical information (e.g., numbers, types of handicapping conditions, occupations, etc.) on handicapped apprentices' participation in postsecondary vocational special needs programs.

- No different emphasis than for regular students.
- Notices are sent to all secondary and post-secondary institutions that are appropriate. Our state does not have an apprenticeship council. We work closely with the institutions as far as the related training. We try to mainstream our students as much as possible into the regular related instruction for apprenticeship training.
- We have a lot of "fragmented" activities going on -- LEAs are conducting more work experience programs, but not really extending into apprenticeship programs for special education students.
- No specifics.
- No data.
- Some activities are coordinated with our special handicapped programs on work evaluation, counseling, and job placement.

5. Number of respondents identifying state laws and/or administrative policies which pertain to the participation of handicapped in apprenticeship:

5.....18%

Citations:

- Applicants for state/federal funding for related instruction for apprenticeship programs must conform with Title VI of the Civil Rights Act of 1964, and Title II of the Carl Perkins Vocational Education Act (P.L. 98-524).
- State law addresses the federal law on non-discrimination but no other mention is made on serving handicapped students.
- No discrimination laws.
- State plan and Carl D. Perkins Act: "Handicapped students are provided equal access to the full range of vocational programs available to their non-handicapped peers."
- Policy statement of no discrimination regarding race, color, handicapped....page 196, Delaware Vocational Education Handbook.
- Florida State Plan for Vocational Education, 1986-88. Page 30, item 4.3-2 pertains to equal access, including apprenticeship programs.

6. Expressed agreement that existing state and/or federal guidelines and standards facilitate access of handicapped students to apprenticeship.

| | |
|---|---|
| yes: | 7.....25% |
| no: | 7.....25% |
| don't know: | 11.....39% |

7. Identified incentives (e.g., legislative, program policy) that encourage the use of apprenticeship for handicapped students.

- Vocational training in Colorado is open accessibility for handicapped and disadvantaged students who pass and complete entrance level tests.
- The law is written to include handicapped in apprenticeship. I'm not sure that it is aggressively followed or really encouraged.
- Tax breaks or wage reimbursement for a limited period of time.
- Federal funding and state-supported technical services. Also, local support by business/industry leaders.
- Federal and state funding available.
- Program personnel encourage students to enter apprenticeships.
- Recruitment activities by personnel in apprenticeship programs.
- The guidelines and standards facilitate access but actual participation is still very limited.

8. Identified barriers (e.g., attitudes, policies and practices, architectural, communications) which limit access of handicapped students to apprenticeship.

- Most employers do not understand the capabilities of special needs students.
- All of the above.
- The basic problem is people's attitudes and the lack of confidence in the students' abilities.
- None - to my knowledge.
- We do have some apprenticeship programs, but my knowledge of them is limited at best. I am not aware of any particular barriers.
- Some apprenticeship programs are limited to high school graduates by law - these laws are being changed to allow high school vocational students to participate.
- Not all training facilities are accessible to the handicapped. Attitudes are still negative toward the handicapped.
- Attitudes -- generalizing the debilitating effects of disabilities instead of looking at individual people who have a disability.
- Attitudes, over-regulation, and lack of employment.
- Apprenticeship programs/employers are very selective when identifying participants. Business and industry are not concerned with OCR requirements. Their door may be open but they do not encourage handicapped students' participation.
- The same barriers and myths that preclude the handicapped in society are the same ones we need to overcome related to apprenticeship.
- Hiring by employers.
- Apprenticeship programs generally require higher skill levels than handicapped students are able to develop.
- Lack of vocational teachers' involvement in coordination activities in the secondary system.
- Lack of administrative directions.
- Lack of proper vocational assessment and screening.
- Unwillingness of parents (and students) to travel to apprenticeship location.
- Somewhat of a barrier remains in the attitudes of instructors when they hear the word "handicapped."

8. Identified barriers..(cont.)

- Limited recruitment and enrollment activities. These are still very limited and need to be more actively pursued or required.

9. Recommendations to improve the participation of handicapped students in apprenticeship and pre-apprenticeship programs.

- Massive PR program is needed to promote special needs student enrollment in apprenticeship programs.
- Employers need to be informed about federal and state labor laws as they apply to special needs students.
- Much more in-service training and direct one:one awareness programming must occur between Special Needs Coordinators, Apprenticeship Leaders, and T&I Instructors serving the disabled in order to get this aspect operable.
- Primarily, the disabled population must have full access to T&I vocational specific skill training before this can be achieved. Vocational specific T&I skill training and competency development prior to placement in pre-apprenticeship or full apprenticeship programs.
- More vocational specific skill training for adult disabled in post-secondary schools prior to phase-in in T&I apprenticeship programs.
- Competency achievement by disabled before referral to apprenticeship training persons.
- State Board of Education should develop a policy on apprenticeship and pre-apprenticeship for handicapped and actively promote its implementation at the local school level.
- The participants should receive some kind of pre-vocational program before entering vocational classes.
- The participants should be exposed to different skills to determine their competence.
- For improvement, the local secondary school, state vocational education, and BAT need to work together to develop an apprentice curriculum.
- The secondary school needs to make the students aware of what vocational programs are available to the students.
- Individual tutoring and assistance to educate and to prepare students for the various types of jobs and expectations available to them in apprenticeship training programs.
- Provide in-service training to school administrators and/or teachers on the specific benefits that apprenticeship training can benefit their students for lifetime employment.
- Set up a proven academic-vocational preparation and training program designed to guide handicapped students through an apprenticeship training program.
- The participants must be interested in the activity that they are being placed into.
- Allow the high school students who are in vocational programs to be registered as apprentices and receive credit for secondary school vocational program participation.
- The improvement of accessibility and program content and support services for all handicapped individuals would go a long way in improving apprenticeship and pre-apprenticeship programs.

9. Recommendations...(cont.)

- Most apprenticeship programs must follow the dictates of national organizations, therefore impetus from them should be stronger.
- Discussion of benefits of availability of apprenticeship to disabled people between providers of apprenticeship programs, disabled individuals, etc.
- Reviewing present law, practices, etc., for likely discrimination and for reasons (legitimate or not legitimate) for the discrimination.
- Recommendations for updating and improving laws, policies, and practices.
- Develop a concerted public relations program that apprenticeship need not be tied to unionization.
- Provide wage subsidy and related instructional cost reimbursement.
- Create a national image enhancement program.
- Initiate a promotional campaign to encourage employers to recruit handicapped students. This should emphasize the abilities of handicapped persons.
- Federal legislation is needed to encourage employer participation with handicapped students. The legislation should carry incentives for working with the handicapped.
- Follow-up program to ensure continued employment should be initiated.
- Those programs serving handicapped individuals need to be more aggressive in making referrals to apprenticeship programs and be an advocate in locating sponsors for the apprenticeable trades.
- Have them apply if interested, be able to pass entrance exams, and do the work.
- Develop apprenticeship programs to include lower skill entry positions.
- Require apprenticeships!
- Include pre-apprenticeship programs in the LEA's annual vocational plans.
- Allocate dollar resources, staff, equipment, and other services in order to facilitate handicapped student participation in vocational pre-apprenticeship programs.
- Stronger legislation via the Office of Civil Rights.
- Support of interagency groups -- such as special education on local, parish, and state levels.
- More involvement by parents - community awareness.
- Information about merits of apprenticeship for teachers and school administrators.
- Provide information to employers and/or staff of the Department of Labor and Industries, Division of Apprentice Training, on performance of handicapped persons in apprenticeable trades.
- Have administrative and instructional personnel visit the programs of special vocational education. Speak to the students, explain what programs are available, cost, time of training, salaries, location of programs.
- Staff development to prepare apprenticeship personnel to work with the handicapped.
- Flexible admission standards are needed that do not bar handicapped students (also, program standards need flexibility).
- Transition services geared toward placing handicapped persons into apprenticeship programs.

TABLE III-2

Summary of Responses

State Directors of Special Education

(N=30)

1. Extent to which apprenticeship (including pre-apprenticeship) is being used by state and local special education programs to support the transition from school to work for handicapped students.

| | |
|---|---|
| not at all: | 14.....47% |
| very little: | 8.....27% |
| to some extent: | 5.....17% |
| to a great extent: | 1.....3% |

2. Available descriptive and statistical information (e.g., number, types of handicapping conditions, occupations, etc.) on handicapped students' participation in apprenticeship and pre-apprenticeship programs.

- About two wheelchair persons.
- Large numbers of learning disabled students in programs which lead to apprenticeships in licensed occupations.
- Missouri offers a cooperative school-work program for secondary students. Approximately 130 of the 540 districts have such a model. We do offer students "apprenticeship" type activities in conjunction with the Division of Vocational Rehabilitation, as students have opportunities to receive off-campus training in a variety of settings. Many are trained in service occupations such as food services work in hospitals and restaurants, nurse aide, service station attendant, and building maintenance programs just to name a few. Specific job training skills, e.g., auto body and fender repair, is also available through area vocational programs or on-the-job training.
- The reason that I did not return this questionnaire is because it seems totally inappropriate here in American Samoa. We do not have any effective work-study program at this time. Our community college is developing its academic program, but little is happening in the trades area.
- You would have to get this number from the forty local school districts. We do not collect state data.
- Not available from the state office.
- Sorry, no figures are currently available.
- A total of 120 students are being served in Project Transition, which has six different phases or components. Another Vermont program, SET Industries (Supervised Evaluation and Training in Industry), serves eight students. Five are in apprenticeable occupations, including electrical trades. VR and JTPA are involved. Formal apprenticeship is a small part of the program now, but is expected to play a larger role in the future.
- Thirteen transition-related programs, serving 11 counties, and over 3,700 students are in place in Maryland. The Prince George's County Employment Preparation Programs are targeting apprenticeable occupations with pre-apprenticeship type activities with employers.

2. Available descriptive and statistical information...(cont.)

- Using the definition of apprenticeship which you provided, we know of no such programs in our state. There are various kinds of OJT programs and public school-sponsored collaborative efforts, but none fit the apprenticeship definition.
- Not available.
- I have spoken to the Office of Vocational Education and we do not feel there are any apprenticeship programs in existence for high school handicapped students in Georgia.
- It is really sort of "by chance" when it happens and so it is hard to describe! It can be said better by referring to it as "disorganized" crisis.
- Unfortunately there is practically no information at all maintained regarding the participation of handicapped persons in these programs. My responses are based upon conversations with various people whom I thought would most likely have the information.
- There is really no records/data of existing (very little) apprenticeship on the Territory. This is unfortunate since it is rated as a "high priority" in employment needs assessment.
- Unable to determine with the data we collect.
- None available. We have also contacted the State Board for Community Colleges and Occupational Education, and they have answered negatively.

3. Number of respondents indicating their state/agency has laws and/or policies which pertain to the participation of handicapped students in apprenticeship:

2.....7%

Citations:

- Cal-Plan (Governing plan for state DAS and C&C, California Apprenticeship Council)
- None except those required by various federally funded programs and even those have insignificant impact.
- Unable to determine.

4. Expressed agreement that existing state and/or federal guidelines and standards facilitate access of handicapped students to apprenticeship.

| | | |
|---|---|---|
| yes: | 6 | 20% |
| no: | 9 | 30% |
| don't know: | 13 | 43% |

5. Identified incentives (e.g., legislative, program policy) that encourage the use of appenticeship for handicapped students.

- Don't know.
- Tax credits are good.
- Should be able to pay less than the minimum wage.
- Work experience in the curriculum for credit, acknowledging by certificate the contributions of the employer and trainee, and using a single communication channel to the employers by the applicants.

5. Identified incentives...(cont.)

- In a very broad sense, the Amendments to P.L. 94-142 regarding transition programs for the handicapped.
- None that I am aware of.
- P.L. 94-142 and State Regulations mandate training but not specifically apprenticeships.
- There are none.
- We are modeling some of our informal practices after Hawaii Community Based Education and I am now in the process of developing plans to pilot some limited Inter-Agency program agreements in one of our LEAs.
- Dedicated workers.
- Existing State guidelines do not preclude handicapped students from participation in apprenticeship programs, however, guidelines which promote access have not been developed.

6. Identified barriers (e.g., attitudes, policies and practices, architectural, communications) which limit the access of handicapped students to apprenticeship.

- Unions.
- Fear of the handicapped; once employed, if the individual is a poor employee, he/she cannot be fired because they will sue.
- The public schools' educational programs are the major barrier.
- Lack of sufficient money and staff in the schools to assist students in transitioning from the schools into apprenticeship opportunities.
- At the school (local education agency) level, inadequate or lack of linkage with the business community and, thus, with apprenticeships.
- Attitudes.
- Lack of placements.
- Lack of funds.
- Lack of qualified trainers.
- Transportation.
- Economic conditions in a given community.
- Company insurance requirements.
- Co-workers willingness to train.
- Poor preparation of the trainee.
- Lack of supervision.
- Myths about the handicapped.
- Lack of communication between service providers about the capabilities of persons with handicapping conditions.
- Attitudes of educators and employers regarding the potential of handicapped individuals.
- Access to programs.
- No outreach activities.
- Few support services in training institutes.
- Attitudes of employers to hire handicapped persons.
- Lack of information to families.
- Probably "attitudes" -- the answer I got from the Bureau of Apprenticeship was "no sponsors with registered apprentice programs."
- Nothing limits access, as the State does not have Apprenticeship program except in a few individual cases which are arranged by Vocational Rehabilitation.
- Could be any or all of the barriers listed.

6. Identified barriers..(cont.)

- Lack of inter-agency cooperation.
- Lack of qualified personnel in our local level administration.
- Lack of communication linkage.
- Our remoteness is probably the most important factor preventing any plan to try any new/creative idea in program or service delivery.
- Trade requirements.
- Lack of awareness regarding apprenticeship programs.
- Program standards for existing apprenticeship programs.
- A notion that handicapped cannot be productive employees.
- Lack of local government's willingness to provide special tax considerations to outfits that employ handicapped persons.
- Revenue and tax policies are too strict and no one wants to take the time to offer alternatives.

7. Recommendations to improve the participation of handicapped students in apprenticeship or pre-apprenticeship programs.

- More federal or state grant funds.
- I have some difficulty in knowing how your agency interprets "apprenticeship." Assuming that this implies opportunities for handicapped students for work in a "real life" employment situation with supportive services provided by other full-time employees, emphasis and support from the various labor unions would be a great benefit. Some support is available, but needs to be expanded.
- First, apprenticeship programs need to be locally developed. I think in many cases unskilled persons are simply hired and then given on-the-job training.
- Start with the more mildly handicapped to prove success.
- Peer volunteers should be used to serve as advocates in the work situtaion.
- Guidelines need to be developed and implemented at the local level with the schools and business and industry.
- Increase funding for the adult service providers (through DMHDD and DORS) to assist in transitioning handicapped students.
- JTPA, increase the amount of dollars available to businesses who hire and train handicapped students.
- Awareness sessions for business personnel.
- Inter-agency cooperation increased.
- Funding!
- Include this opportunity in the curriculum; organize the apprenticeship programs; train the trainers and prepare the applicants; set up a central communication channel.
- Obtain input from employers; be flexible, expect changes, and have knowledge of the job sites and employer expectations; provide some support for apprentice expenses; follow up the placement.
- Utilization of special education personnel to work directly with personnel in apprenticeship programs.
- Modification of non-essential entrance requirements such as Carnegie units.
- Target handicapped populations for preparatory coursework aimed at the apprenticeship exams.

7. Recommendations...(cont.)

- Include information on apprenticeship opportunities in career education for handicapped individuals.
- Work with industry and labor around handicapped issues.
- Outreach activities by programs with apprenticeship.
- Distribution of information on exemplary programs, success stories, data, etc.
- Mandates of certain percentages of handicapped in apprentice programs.
- Strengthen State/Federal laws.
- Increase State/Federal funding.
- Inservice training of both employers and educators.
- A good public relations-advertising program geared to the educator, rehabilitator, and employer.
- Enough funds (both for amount and length of time they are available) to hire expertise in vocation related education cooperation to pilot some selected apprenticeships with small local businesses.
- Identification of resources (personnel) with multi-cultural experience and background who are able to be in the region for an extended period of time to train local people in the "art of Vocational Education in Apprenticeship."
- Development and organization of an administering body or committee or council to be trained and assisted in future assumption of the VEA activities in the Micronesia area.
- Industry acceptance of handicapped employees.
- Initial contacts with the Department of Labor to explore the use of apprenticeship programs for handicapped students.
- Inter-agency cooperation.
- Develop policy which would facilitate this aspect of the service delivery system.
- Legislated ways/means of requiring "cost sharing" agreements between private business and government agencies responsible for apprentice programs. Legislation to require establishment of "Apprentice Council or Board" to provide oversight responsibility of apprentice programs.
- Legislate/legalize local Apprenticeship Boards/Authority and charge them with duties to establish Government-Business program implementation guidelines.
- Revise existing program regulations to allow local Apprenticeship Boards/Authority to receive grants from the Governor's office of funds to support apprentice training.
- Better publicize the existence of the apprenticeship model.
- Increase inter-agency cooperation and awareness.
- Provide incentives to employers to develop apprenticeship/pre-apprenticeship programs; there's a shortage in this state.

TABLE III-3

Summary of Responses

State Vocational Rehabilitation Agencies (General, Blind)

(N=35)

1. Estimated extent to which apprenticeship is used by state and local vocational rehabilitation programs to provide employment and training for handicapped persons.

| | | |
|---|---|---|
| not at all: | 13 | 37% |
| very little: | 19 | 54% |
| to some extent: | 3 | 9% |
| to a great extent: | 0 | 0% |

2. Available descriptive and statistical information (e.g., number of persons, types of disabilities, occupations, etc.) on vocational placements of handicapped persons in apprenticeship programs.

- Not available.
- Our data system is not set up to identify apprenticeship training. Post-secondary training categories on which we have data are:
  1. College or Univerasity
  2. Business School
  3. Vocational School
  4. On-the-job training
- The Mississippi General Agency does not have an apprenticeship program. We do involve many of our clients in what we refer to as "on-the-job training."
- Statistical information is not available. The only clients we had who participated in such programs were two hearing impaired persons. One received training in optical finishing and the other in plumbing.
- Recruitment notices are sent to our offices. No special consideration for referrals from Division of Vocational Rehabilitation and Services for the Blind Division.
- One person in last five years.
- Formal apprenticeship is not available currently in American Samoa. We do use an on-the-job subsidized salary for our handicapped clients. This has been accomplished in egg farming, landscaping, teachers aid, secretary and construction occupations.
- Unknown.
- Not available.
- Data not available.
- My agency uses them very little, perhaps due to our blind clients. I am not certain how much general state rehab agencies make use of apprenticeship programs, my impression is that they do not make much use of them.
- Projects with Industry which is a project of Nevada AFL-CIO receives notification from the Apprenticeship Council and the local unions of apprenticeship opportunities. Because of the construction-type apprenticeships, physically handicapped individuals are not hired. Data unavailable.

2. Available descriptive and statistical information...(cont.)

- In the past (like 5 to 10 years ago) there was more being done in cooperation with the State Apprenticeship Council. As the percent of severely disabled increases fewer clients can meet the physical/mental demands.
- The economy in Oregon has been severely depressed for the past four years (and continues to be) especially in the trades.
- Five deaf individuals participated in a carpentry apprenticeship program in Lake County, Indiana in the late 1970's. The funding came from a human resources development institute grant. As a result of the declining economy, no additional individuals were trained.

3. Number of respondents indicating their state/agency has laws and/or policies which pertain to the participation of handicapped persons in apprenticeship:

3.....9%

Citations:

- Federal Regulations 29CFR 30.2(b)
- Title V of the Rehabilitation Act of 1973 as amended - sections 501-503-504.
- The New Hampshire statute includes handicapped.
- Public Law 483 of 15 May 1947 - "Apprenticeship Law" established the Apprenticeship Council of P.R.
- Public Law 96 of 26 June 1956 - "Minimum Wages Law" (P.R.)
- Public Law 414 of 13 May 1947 - "P.R. Vocational Rehabilitation Law"
- A portion of the Iowa Civil Rights statute forbids discrimination against the disabled in employment programs.
- Oregon Statute 660. 002 thru 190.
- Targeted jobs tax credits can be used in an apprenticeship if the trainee is on the payroll. This law was not extended before the December 1985 deadline and currently no vouchering is authorized.
- JTPA focuses on short term training so is not likely to promote apprenticeships.

4. Expressed agreement that existing state and/or federal guidelines and standards facilitate access of handicapped persons to apprenticeship for employment and training.

| | |
|---|---|
| yes: | 5.....14% |
| no: | 7.....20% |
| don't know: | 23.....66% |

5. Identified incentives (e.g., legislative, administrative policy) that encourage use of apprenticeship for handicapped persons.

- None.
- None known.
- No comment.
- None in Kentucky.
- Stepped pay schedule beginning with 60% of minimum wage for the particular job or trade. Vocational Rehabilitation Program subsidy of clients' participation in apprenticeship programs.

5. Identified incentives...(cont.)

- None known.
- Unknown.
- The agency's primary mission to help place blind persons in employment through any reasonable means, including apprenticeship programs, OJT, etc.
- Section 503, "pre-employment exams" to determine suitable placement in a job.
- Attitudes toward the handicapped, Good Ole Boy Network Practices, Seniority System.
- None that we know of.
- None.
- Projects with Industry.
- In general, Title V or VI assurances against discrimination on the basis of handicap, and the reasonable accommodation requirement.
- Am not aware of any at this time.

6. Identified barriers (e.g., attitudes, policies and practices, architectural, communications) which limit the access of handicapped persons to apprenticeship.

- Attitudinal and architectural barriers to handicapped individuals are just starting to be recognized in our community.
- None.
- Passing the written examination; two clients have tried with a special testing period considered. However, they still failed.
- The primary barrier appears to be a general lack of interest and inavailability of apprentice programs for handicapped persons. Of eleven field offices contacted, only one had concrete evidence of a client participating in such a program. This low figure could also be attributed to lack of awareness of apprenticeships.
- Disabilities with functional limitation often preclude people with disabilities to physically perform some tasks associated with various apprenticeship trades.
- Attitudes of trade union personnel to disabled.
- Turf problems/priorities of local staff.
- Limited available slots.
- Selection of most qualified by examination.
- Attitudes are probably the paramount issue, and the need to make some architectural and other assistive accommodations is also important.
- Union entrance requirements.
- Putting handicapped persons to work is viewed as taking jobs away from the able-bodied.
- Attitudes, administrative policies and practices, architectural barriers, lack of effective communication between private industry and community training programs.
- Same barriers that are applicable to employment.
- Unknown.
- The crux of the problem seems to be the continued unwillingness of labor organizations to accept qualified blind persons in apprenticeship programs.
- Communications.
- Lack of local union support, i.e., attitudinal.

6. Identified barriers..(cont.)

- Testing and physical requirements.
- All of the above, e.g., attitudes, policies and practices, architectural, communications, plus lack of awareness of existing programs on the part of consumers and employers.
- Probably attitudinal barriers are the main obstacle.
- Lack of outreach and information.
- Attitudes regarding handicapped individuals and attitudes by handicapped individuals regarding college as the only choice.
- The most limiting factor is the physical and/or mental limitations that make our clients eligible for VR services.
- Am not aware of any at this time.

7. Recommendations to improve access of handicapped persons to apprenticeship for employment and training.

- Employers to open up and accept handicapped individuals.
- More public awareness.
- Establish policies to encourage participation of handicapped individuals.
- Continue incentive programs such as Targeted Jobs Tax Credit.
- Require participant statistics to be kept as well as percentages of applicants that are disabled.
- Obviously, greater awareness of their existence by those who could make use of this type of training, including me.
- None.
- Use simpler tests or manual testing devices instead of written tests where language is difficult to comprehend.
- Joint meetings between VR agencies (Blind and General) with private industry and union officials.
- Promote legislation to require unions to solicit handicapped members for apprenticeship programs.
- Training for DVR counselors to develop apprenticeship opportunities for persons with disabilities.
- Increase public awareness efforts by organizations such as yours. While surveying our offices, I found little involvement in what could be excellent vocational opportunities for our clients.
- Willingness of unions to work with people with disabilities would help.
- Identify potential and level of commitment before investing time and effort -- time and effort may not be worth it.
- A consistent and coordinated public education program directed toward the public, unions and employers, which communicates the abilities of handicapped persons and their qualifications for apprenticeship programs.
- Targeted discussion sessions aimed at certain unions and employers for the purpose of debunking myths about the handicapped and breaking down the impression that they are "outside" competitors for jobs rather than individuals who hope to gain access through the established system.
- Financial incentives to purchase specialized equipment or to make accommodations; provision of on-site rehabilitation engineering and consultation services to re-work job layouts and design.

7. Recommendations...(cont.)

- If VR thought this was an effective tool for handicapped individuals to access the job market, then lobbying for appropriate legislation would be worthwhile.
- Force labor unions to set aside a percentage of their apprenticeships for handicapped persons.
- Communication between agencies working with handicapped persons and unions/industry with apprenticeship programs.
- Mandatory law with a guaranteed percentage of slots available for qualified handicapped persons.
- Have those who are administratively responsible for apprenticeship programs actively recruit from agencies working with handicapped people.
- Keep agencies that work with handicapped individuals informed of apprenticeship opportunities and methods necessary to become involved with these training programs.
- An aggressive public relations program to educate the employers on the benefits of apprenticeship, and to create among them awareness of the existence of a trained pool of qualified handicapped workers.
- NAIEC directly approach the Banking, Commerce, and Industrial Associations in Puerto Rico.
- NAIEC directly approach the Puerto Rico Department of Labor and local labor unions.
- More information.
- Unknown.
- A change in attitudes and a more enlightened approach on the part of labor organizations which would allow qualified blind persons to participate in apprenticeship programs.
- None.
- The state should enter into an agreement with the AFL-CIO for the purposes of training people.
- Active recruitment by apprenticeship programs.
- Awareness programs for VR counselors and local union members.
- More involvement by private industry and unions.
- Outreach and education for consumer groups and employers' organizations.
- Establishment of a structured link between VR agencies and the apprenticeship system via RSA, CSAVR, OSERS, NAIEC or other group.
- Improved communication and education of employers, union staff to handicapping conditions -- abilities and disabilities.
- Provide training on availability and process of apprenticeship.
- "Limited apprenticeships" which would <u>not</u> require a person with limitations to do each and every task related to the trade in which they might apprentice. In other words, some type of reasonable accommodation when the ability to perform most tasks could lead to suitable employment or modified work.
- A targeted apprenticeship tax credit with one targeted group being the VR agency clients.
- Tie in with workers' compensation insurers who provide rehabilitation and who would likely pay for long term training via on-the-job training or wage subsidies.
- Develop an effective relationship with labor unions.

TABLE III-A

Summary of Responses

State Apprenticeship Councils/Agencies

(N=17)

1. Estimated extent to which handicapped persons are participating in apprenticeship and pre-apprenticeship programs.

| | |
|---|---|
| not at all (0%): | 5.....29% |
| very little (less than 2%): | 6.....35% |
| to some extent (2% to 5%): | 1.....6% |
| to a great extent (5% or more): | 0.....0% |

2. Available descriptive and statistical information (e.g., number of persons, types of handicapping conditions, occupations, etc.) on handicapped persons participating in apprenticeship and pre-apprenticeship programs.

- During fiscal year 1984-85, the Right to Employment Administration offered services to 2,852 handicapped persons in their different activities. Apprenticeship programs served 84 handicapped persons. The agency gives special attention to target groups which include, among others, the handicapped, veterans, and offenders.
- One refrigeration, pipefitting, and air conditioning apprentice with a learning disability. This apprentice had fair performance on the job, however, he was unable to absorb the related training and made very little progress. Therefore, the committee had no alternative but to cancel him. One deaf-mute carpenter apprentice who has done very well and will complete soon. Two chef apprentices with slow learning ability.
- Primarily, the handicapped are served in Vermont through pre-apprenticeship training programs such as Vermont Institutional Industries (Department of Corrections) and the Brattleboro Retreat.
- Baltimore ABC Chapter completed an apprentice plumber who lost a leg in an accident during the first year of apprenticeship. After undergoing rehabilitation, he returned to graduate this year. A blind man is working in an apprenticeship at Glen Burnie Automatic Transmission. A man with a hearing loss is training as an electrician with Associated Builders and Contractors' Apprenticeship program.
- We have eight handicapped people in our apprenticeship program. Six are physically handicapped and two are mentally handicapped. These people are being trained as machinists, tool makers, and taxidermists.
- Presently the Office of Job Training and Skill Development is participating in a pilot project called Pathways to Employment. The goal of this project is to provide a more effective transition for the handicapped from school to sustained employment or post-secondary training and to increase the coordination of efforts between state and local service providers. Only in its infancy, the program has had one success and one failure.
- N/A

2. Available descriptive and statistical information...(cont.)

- As of June, 1985, 26 of 15,776 apprentices were handicapped. Occupations included construction, printing, metal, glass manufacturing, service-repair, and maintenance trades. In the six months period of the first half of 1985, seven handicapped apprentices exited apprentice programs. Of this number, four completed, one quit, and two were laid off.
- The above information is unknown in Virginia. Employers screen applicants on ability to physically perform the duties of the job. No indication is given on agreements of non-relevant handicaps.
- Only handicapped employed as apprentices are hearing impaired or referrals from Vocational Rehabilitation, which are usually back injuries.
- This agency does not have any information specific to handicapped persons participating in apprenticeship programs.
- This information is not available.
- Not known.

3. Descriptions of councils'/agencies' management information systems for maintaining records on apprenticeship programs and individual apprentices.

- Statistical reports include monthly progress reports on each apprentice.
- Maintained by hand in the central office. Impossible to supply computer printouts, etc.
- Copies attached.
- New Hampshire's apprenticeship program is small but growing. We are using a standard file system with quick reference cards to track our apprentices' progress. The apprentice record book and employer record card system is used to track on-the-job training. The related training program is computerized by the Department of Education. The recordkeeping is basic and I believe copies would not help your effort.
- Our agency has each apprentice complete a registration card. The Department of Educational and Cultural Services maintains records on related instruction course information.
- The Apprenticeship Agreement and other records and reports allow us to generate computerized reports which provide information on apprentice exits by characteristics and reason, active apprentices by veteran status and ethnic group, and by trades, and new registrations by trades, veteran status, and ethnic groups.
- We report on the BAT-AMS System. Copies of forms are attached.
- We are currently in the process of re-working our MIS with the intention of moving towards computerization. At present we operate with a manual system. Please see attached forms, which include Apprentice and Trainee Evaluation Form, Apprentice or Trainee Record Card, Apprentice Agreement, Apprenticeship Application, Summary Sheets, Employer Promotion Contact Sheet, and Telephone/Walk-in Tally Sheet.
- Our agency's Monthly Activities Report is the basis for apprenticeship recordkeeping. These reports show Subscribers to JAC Standards, Individual Programs Revised, Change of Company Name, Change in Status of Apprentice, Apprenticeship Agreements Canceled, Certificates of Completion Granted, Trainee Agreements Canceled, Trainee Agreements Com-

Descriptions of...management information systems...(cont.)

pleted, New Indentures, Apprentices Reinstated, and Trainee Agreements Registered.

- Delaware uses a manual system. 3 x 5 cards are maintained on each apprentice. Individual folders are maintained on each program sponsor. Within each folder are the individual indenturing agreements between the sponsor and the apprentice along with the various other forms required such as the standards of apprenticeship, correspondence, etc.
- Although we are currently working on implementing an automated system, records are now kept manually.
- Individual apprentice records are maintained by apprentice agreements on file with the program in which they are registered.
- Not available.

4. Descriptions of specific information that is maintained on handicapped persons in apprenticeship programs and their handicapping conditions.

- The client's file includes information regarding the handicapping condition such as working limitations, medical treatment, if any, vocational interest, mental or physical limitations, etc.
- None.
- None.
- None.
- At this time we have not identified the handicapped apprentices. We track them and keep the same information as we do on all apprentices. I may look into special identification as we become more involved with handicapped apprentices.
- N/A
- No information of specific conditions are included in our computerized, summary reports. However, we do code the handicapping condition on the Apprenticeship Agreement, if applicable. A list of handicapped codes based on location of disability, e.g., lower extremeties or neuropsychiatric, is used. There are 13 major categories and 70 specific conditions on the list.
- None.
- None.
- None.
- We do not currently keep records or account of handicapped apprentices.
- None.

5. Expressed agreement that existing state/federal guidelines and standards facilitate access of handicapped persons to apprenticeship.

| | | |
|---|---|---|
| yes: | 3 | 18% |
| no: | 4 | 24% |
| don't know: | 6 | 35% |

6. Identified incentives (e.g., legislative, administrative policy, funding policy) that encourage the use of apprenticeship for employment and training of handicapped persons.

- The Right to Employment Administration and Vocational Rehabilitation Program provide funding to employers during their period of apprenticeship to offset the cost of training. The amount varies from $150 to $300 per month based in part on the individual's handicapping condition.
- There are no available resources in this bureau to offer incentives for employment of the handicapped.
- Tax credits to employers.
- I have not looked into this area, but I plan to become more active in handicapped apprentices. Funding policies, tax exemption or subsidized wages would attract employers into apprenticeship for the handicapped.
- The 1985 legislature amended the Fair Employment Practices Act to include unfair discriminatory practices against "qualified handicapped" as described in W.S. 27-9-105 (Wyoming).
- TJTC is quite helpful.
- Current programs are adequate.
- Hawaii Revised Statutes, Chapter 378, Employment Practices Law, Part I, Discriminatory Practices, Section 378-2, Discriminatory practices made unlawful; offenses defined. It shall be an unlawful discriminatory practice: (1) For an employer to refuse to hire or employ or to bar or discharge from employment, or otherwise to discriminate against any individual in compensation or in the terms, conditions, or privileges of employment because of race, sex, age, religion, color, ancestry, physical handicap, marital status, or arrest and court record.
- State of New York Department of Labor Regulations, Equal Employment Opportunity in Apprenticeship Training, as Amended Effective November 20, 1978, includes "disability" in equal opportunity standards.
- Am unaware of any legislative policies, etc., that encourage use of handicapped individuals in apprenticeship programs.
- JTPA funding policies may be applicable.
- None known.

7. Identified barriers (e.g., attitudes, policies and practices, architectural, communications) which limit the access of handicapped persons to apprenticeship.

- Architectural barriers.
- Physical ability to perform tasks of the trade.
- All of the above plus competition from non-handicapped, experienced workers who are also looking for employment.
- Unknown at this time.
- Major issue is safety for individuals and other co-workers.
- Apprentices in the construction industry must be physically fit to perform the work in the trade.
- Same barriers exist for a sponsor to hire a handicapped individual for apprenticeship as exist for that employer to hire a handicapped individual for any other type of employment.

7. Identified barriers..(cont.)

- The general public attitude that handicapped persons are unable to perform work tasks without giving them the opportunity to prove themselves.
- Possible safety consideration relative to handicapped persons working as apprentices under hazardous conditions.
- Competition for jobs.

8. Recommendations to improve access of handicapped persons to apprenticeship programs.

- Advertising and broadcasting campaign.
- Promotion of apprenticeship programs in the private and public sectors.
- Improve coordination with Vocational Rehabilitation Programs and other agencies engaged in services to handicapped persons.
- Perhaps a campaign or promotion from the United States Department of Labor to encourage apprenticeship, from a national level, to employ handicapped persons in occupations which could use certain persons with limited handicaps.
- Pre-apprenticeship training programs.
- Strong advocacy from employment placement agencies.
- Establishment of a pool of eligible handicapped people from which an employer may select.
- None at this time.
- Pre-apprenticeship training to prepare for entry to program to accommodate handicapping condition of the apprentice.
- None -- employers select apprentices to meet their needs.
- None at this time.
- The first thought that comes to mind is that a stipend or a training reimbursement cost factor could be worked into a programming concept that would encourage the companies to indenture handicapped persons into their apprenticeship training programs.
- Campaigns could be undertaken to make employers aware of the handicapped individuals' capabilities and that they can produce the same results in their apprenticeship training programs as non-handicapped individuals.
- Public awareness and education that handicapped persons need a chance to demonstrate that they can do the job.
- More handicapped persons applying for apprenticeship opportunities.
- Counsel handicapped persons to identify those occupations for which their handicaps would not limit their performances.
- Improved funding of programs concerned with the placement of handicapped persons; including training cost reimbursement to individual employers.
- A strong, adequately funded informational program geared toward employers who sponsor apprenticeship programs.
- Frank discussion and information sharing concerning specific physical handicaps relative to various work site conditions under which apprentices would be employed; this is to be planned as round table discussions between sponsors of apprenticeship programs and experts on the employment of the handicapped.
- Four times more work.

TABLE III-5

Summary of Responses

Members, Federal Committee on Apprenticeship,
and Regional Directors, BAT

(N=10)

1. Estimated extent to which handicapped persons are participating in apprenticeship programs nationally.

| | |
|---|---|
| not at all (0%): | 0.....0% |
| very little (less than 2%): | 6.....60% |
| to some extent (2% to 5%): | 4.....40% |
| to a great extent (5% or more): | 0.....0% |

2. Expressed agreement that existing federal guidelines and standards facilitate access of handicapped persons to apprenticeship.

| | |
|---|---|
| yes: | 5.....50% |
| no: | 0.....0% |
| don't know: | 5.....50% |

3. Identified incentives (e.g., legislative, administrative policy) that encourage use of apprenticeship for handicapped persons.

- Don't know.
- Don't know.
- EEO Regulations.
- Federal/State/Local regulations aimed at eliminating architectural barriers.
- Desire to learn and work hard in accomplishing this.
- Federal regulations require that government contractors and subcontractors take affirmative action to employ and advance in employment qualified handicapped individuals.
- The Bureau of Apprenticeship and Training previously has included the handicapped as a target population for increased promotional efforts.
- Rehabilitation Act of 1973.
- Executive Order 11914, dated April 28, 1976, gave the Dept. of H.E.W. the responsibility of implementation of Section 504 of the Act. U.S. DOL proposed regulations on Jan. 4, 1980.
- Most handicapped who are presently employed in suitable jobs have proven to be dependable employees and recognized by the employer.
- None that I am aware of.
- Affirmative Action Policies.

4. Identified barriers (e.g., attitudes, policy and practices, architectural, communications) which limit the access of handicapped persons to apprenticeship.

- Any requirements that are not job related.
- Don't know.

4. Identified barriers..(cont.)

- Mostly physical as climbing, lifting, confined space entry and other such responsibilities constitute the majority of apprentices' work assignments.
- Mentally due to the high degree of Math and Mech. Comprehension involved.
- Handicapped individuals may not be aware of apprenticeship opportunities.
- Limitations, if any, in physical or mental requirements.
- Current Federal apprenticeship regulations do not provide barriers.
- Individual program standards may require that apprentices be physically able to perform the work required of the trade and meet other requirements as established by local Joint Training Committees.
- Qualifications, good eye vision, good hearing, and other health requirements.
- Architectural barriers in the private sector exist, also poor attitudes of employees limit their involvement.
- Attitudes and communications.
- Industry and government safety requirements.
- Entrance testing.

5. Recommendations to improve access of handicapped persons to apprenticeship programs.

- Develop valid occupational requirements and make them stick.
- Don't know.
- Do not see entry as physically feasible or in the case of the mentally handicapped as mentally feasible.
- Provide information to handicapped persons regarding apprenticeship opportunities.
- Public relation -- success stories publicized through state Department of Labor channels.
- Incentives -- such as wage assistance during pre-training period.
- Increased promotional efforts, including publication of information on exemplary programs.
- Development of special coordination efforts between the U.S. Department of Labor and U.S. Department of Education as called for under the Carl D. Perkins Vocational Education Act of 1984 for activities related to increasing participation by handicapped individuals into apprenticeship programs.
- Develop and operate demonstration programs for Handicapped in Apprenticeship.
- Review work sites (with emphasis on) machine trades, bench work, computer operators, etc.
- There may be some areas where the internship certificate could be used.
- Informational packets, materials, directly related to specific occupations and programs that could use the services of the handicapped should be developed and distributed to both parties.
- To improve communications between disability training centers and employers. Employers are not aware of the capabilities of the disabled.

5. Recommendations...(cont.)

- Provide, through legislation, possible tax breaks or some type of incentive for employers who give handicapped an opportunity to enter the apprenticeship program.
- Establish employer advisory committees to advise handicapped training schools on how to prepare handicapped to meet apprenticeship entry level qualifications.
- Financial incentives to employers.

TABLE III-6

Summary of Responses

National Organizations and Officials Promoting Apprenticeship and Training

(N=12)*

1. Estimated extent to which handicapped persons are participating in apprenticeship and pre-apprenticeship programs sponsored/supported by the organization.

| | |
|---|---|
| not at all (0%): | 4.....33% |
| very little (less than 2%): | 2.....17% |
| to some extent (2% to 5%): | 2.....17% |
| to a great extent (5% or more): | 0.....0% |
| question not applicable: | 3.....25% |

2. Available descriptive and statistical information (e.g., number of persons, types of handicapping conditions, occupations, etc.) on handicapped persons participating in apprenticeship and pre-apprenticeship programs.

- We do not track handicapped.
- Not available for apprenticeship.
- We, the IBEW, have no information of this nature. Such information would have to be obtained locally.
- Not available.
- Persons, who are suffering from a handicapped condition, generally do not apply to our apprenticeship program. Those who have a condition that interferes with normal intellectual behavior (e.g., those who are retarded) could not effectively perform the cognitive functions required by most if not all apprenticeship programs. Most of the physical disabilities or handicapping conditions generally result in a significant impairment in performing the tasks of the traditional apprenticeable trades; however, such a judgment should not be regarded as absolute. There may be numerous new trades, that by their nature, may transcend many of the impairments of physical disabilities.
- We conduct an annual survey, but the survey doesn't include information regarding the handicapped. As Manager of Education for ABC, I am not aware of construction craft apprenticeships for the handicapped.
- N/A
- The type of work (construction) in which our program is involved does not lend itself to employment of handicapped persons. Most, if not all, of the work involved is very physical in nature. This consists of hand and/or machine application of chemical coatings on floors, walls, ceilings, roofs, and building exteriors. Much of such work must be done from fixed or hanging scaffolds. Thus, mental or physical handicaps would pose a most serious problem as to safety of the employee or others as well as quality of work performed.

*44 organizations responded, but 32 said the survey was "not applicable" to them.

2. Available descriptive and statistical information...(cont.)

- We are a building trades union. Our members' job descriptions require lengthy work on kneeboards and scaffolds. For a person with a physical handicap, this type of work would be quite detrimental to his/her welfare. It could be that we have members with handicaps, however, we feel there would be very few with the type of physical activity that is required.
- NAPHCC develops program materials but does not coordinate the administration or acceptance of apprentices. This is accomplished across the country on a local basis. We have a four-year curriculum for the plumbing industry and currently are embarking on the development of a four-year heating, ventilating, and air conditioning apprenticeship program.

3. Descriptions of organizations' management information systems for maintaining records on apprenticeship programs and individual apprentices.

- We maintain a file of all active and non-active apprentices in our national office.
- None.
- Records are maintained at local and state Home Builder Associations where individual apprenticeship programs are conducted.
- We do not have any information system for maintaining records on apprenticeship programs and individual apprentices because we are not directly involved. Programs are either sponsored locally by the industry, per se, or by the employer. If we want information on our apprentices, we usually obtain this from the U.S. Department of Labor.
- Basically through regional meetings and delegate reports.
- There are four basic records kept on our apprentices. These records are necessary in order to properly track an apprentice's progress as required by the apprenticeship agencies in some form. These records are:
    a. hours worked
    b. records of completing on-the-job training phases
    c. accumulated hours in each wage period
    d. attendance in related instruction and effectively completing the requirement of related instruction
- Each chapter or state organization maintains records in accordance with state regulations. Our national office receives regular reports from chapters.
- Enclosed you will find our "Guidebook" which best answers this request. The application form requests information on physical defects, defects in hearing, vision and speech, and fear of heights. Selection of apprentices follows Title 29 of the Code of Federal Regulations, Part 30 as revised June 12, 1978, i.e., without discrimination because of race, color, religion, national origin, or sex. Applicants must (1) be physically able to perform the work required of the trade, and (2) possess the qualities necessary to succeed in the trade.
- None; apprenticeship training in our industry is registered with State Apprenticeship Councils by local companies themselves, i.e., we are not a third party.
- Not available at this time.

4. Descriptions of specific information which is maintained on handicapped persons in apprenticeship programs and their handicapping conditions.

- None.
- None.
- None.
- Individual employer records.
- If there were any handicapped persons participating in our apprenticeship program, these same records would be required simply as a means of measuring their ability to perform the task. There would be as far as we can tell no need to maintain extra records for those who may have a disability. It is our opinion that such records may only serve to draw unnecessary attention to the affliction rather than to the performance of the workers.
- None available.
- None required. We seek the information in our annual surveys.
- Application form requests information on physical defects, defects in hearing, vision, and speech, and fear of heights.
- None.
- Information not available.

5. Expressed agreement that existing state/federal/organizational guidelines and standards facilitate access of handicapped persons to apprenticeship.

| | |
|---|---|
| yes: | 3.....25% |
| no: | 1.....8% |
| don't know: | 6.....50% |

6. Identified incentives (e.g., legislative, administrative policy, funding) that encourages the use of apprenticeship for training of handicapped persons.

- Federal funds that may go to particular groups. However, we do not support the idea of using federal funds for training. We believe that it is the industry's obligation to train individuals.
- None that I'm aware of that would help in apprenticeable trades because of the physical requirements of the jobs involved.
- It is our opinion that the basic structure of apprenticeship programs, the on-the-job training and related instruction, be much improved structurally and systematically, and better supported through the government bureaucracy so as to better insure competency. Stipends to industry will not insure success.
- Not known.
- I believe that the Federal Title on apprenticeship is so overly inclusive of well intentioned provisions that formal apprenticeship is actually discouraged. Similar comment also applies to state laws on apprenticeship.

7. Identified barriers (e.g., attitudes, policies and practices, architectural, communications) which limit access of handicapped persons to apprenticeship.

- Attitudes and production methods.
- Stereotypes, fears, and lack of interest.

7. Identified barriers..(cont.)

- In programs teaching construction crafts for jobs in the residential industry, the nature of the tasks performed limit access to some handicapped individuals.
- The job itself.
- Basically physical limitations where lifting, climbing, etc., are required. These physical abilities are necessary in most apprenticeable areas.
- There are myths and distortions; however, there are many limitations that are presented by a disability that may not easily be overcome. Some disabilities should not be overcome due to the danger and risk.
- The construction industry has obvious limitations for training the handicapped.
- Physical abilities.
- I believe most employers would like to participate in "selective hiring" of the handicapped, but are stymied by the inclusive "do's and don'ts" of law in this area.

8. Recommendations to improve access of handicapped persons to apprenticeship programs.

- The hearing impaired make excellent bakers. A program designed to train bakers would be a potential growth area. A school which has an existing hearing impaired program and a chef apprentice program would be ideal. Johnson County Community College (Kansas) has both.
- Increased advocacy/lobbying.
- Individual efforts by the handicapped.
- Solicitation of major industries for "moral support."
- Outreach programs targeting specific handicapped groups. Many apprentice programs other than in construction lend themselves to enrolling handicapped individuals.
- I do not feel there is a practical way to open the apprentice program further, due to the physical requirements necessary for apprentices in the auto industry.
- It is hard to make any recommendations that would be meaningful. It must be remembered that there must be mutual benefits to both the employer and the handicapped person. The employer gets reasonable production from handicapped persons and the handicapped persons are productive and self-sufficient. Of course, handicapped persons are inflicted with a disability that tends to restrict their activities; therefore, some patience is necessary. This is a very difficult problem thus it is not always easy to arrive at an equitable solution.
- Better public relations for applicable apprenticeship programs.
- Better promotion of existing opportunities and current programs available.
- Increased "awareness programs" targeted directly at employers emphasizing (1) results to be had (productivity), (2) dependability of handicapped workers, and (3) community involvement of the corporation (as a non-giveaway, but constructive effort). I know this is already done, but needs even more effort, and to smaller companies.

## IV. IMPLICATIONS AND RECOMMENDATIONS

A review of the 161 specific recommendations received from survey questionnaire respondents indicated there were five major areas for consideration to improve the level of participation of handicapped in apprenticeship. Listed in terms of the frequency of occurrence, the five areas were:

| | | | |
|---|---|---|---|
| 1. | Public Relations | 40/161 | 25% |
| 2. | Inter-organizational Coordination and Communication | 25/161 | 16% |
| 3. | Transition Services | 22/161 | 14% |
| 4. | Funding Incentives | 15/161 | 9% |
| 5. | Legislation | 9/161 | 6% |

The emphasis on public relations underscored the feeling expressed by many that there is a need to inform a wide range of groups about apprenticeship as a viable training option for the handicapped. One of the obvious things learned doing this study was the realization that the project informed many people about apprenticeship and about the handicapped. Many survey responses conveyed this notion, that something had been brought to their attention which needed to be pursued further. Many respondents thus realized that. if they didn't know much about this subject, probably many others in their profession don't know about it either.

There seemed to be two aspects to this public relations theme. One was to promote apprenticeship in general, and the other was to promote apprenticeship for the handicapped in particular. Target groups for these public relations campaigns included the general public, employees, union representatives, education and rehabilitation professionals, parents of handicapped students, and handicapped individuals.

Public relations activities suggested included: (1) success stories publicized through the Department of Labor; (2) publication of information on exemplary programs; (3) informational packets and materials directly related to specific occupations; (4) information about federal and state labor laws for employers; (5) stress on the fact that apprenticeship need not be tied to unionization; (6) information on opportunities in apprenticeship as part of career education programs for the handicapped; (7) campaigns that make employers aware of handicapped individuals' capabilities to produce the same results in their apprenticeship programs as non-handicapped individuals; (8) solicitations to major industries; (9) outreach programs targeting specific handicapped groups, e.g., specific learning disabilities; and, (10) awareness program for employers emphasizing productivity, dependability of handicapped workers and positive corporate image from this type of community involvement.

This year, 1987, the 50th Anniversary of the National Apprenticeship Act, may be good timing for launching the types of public relations campaigns recommended. Alternatively, if not in 1987, early 1988 would be another good time, as it would follow closely Department of Labor's publicity activities in celebration of the 50th Anniversary.

Two other areas receiving considerable attention from survey respondents in their recommendations were transition services and inter-organizational

coordination and communication. These two areas are discussed in some detail in the two sections that follow.

A. Role of Apprenticeship in School to Work Transition for the Handicapped

At the very beginning of this project, the potential role of apprenticeship in transition services and programs was recognized. The results and findings of this study bear this out. Survey respondents, especially state coordinators of vocational special needs programs, recognized the need for secondary level programs to prepare handicapped students for apprenticeship opportunities. Consider the following specific recommendations.

* Primarily, the disabled population must have full access to T&I vocational specific skill training before this can be achieved: vocation specific T&I skill training and competency development prior to placement in pre-apprenticeship or full apprenticeship programs.

* State Board of Education should develop a policy on apprenticeship and pre-apprenticeship for handicapped and actively promote its implementation at the local school level.

* Set up a proven academic-vocational preparation and training program designed to guide handicapped students through an apprenticeship training program.

* Allow high school students who are in vocational programs to be registered as apprentices and receive credit for secondary school vocational program participation.

* Those programs serving handicapped individuals need to be more aggressive in making referrals to apprenticeship programs and be an advocate in locating sponsors for the apprenticeable trades.

Research and development in vocational education and training for the handicapped have already pointed in this direction. Cobb and Larkin (1983), Darin and Williams (1982), and Martin, Williams, and Darin (1981) have reviewed apprenticeship's role in the transition process and found that it has some attractive features which suggest it would be a successful strategy for the handicapped.

Secondary level programming efforts such as the parallel teaching process (Langone and Gill, 1985) have moved programming efforts more in line with business and industry expectations of workers. In two recent studies on apprenticeship in foreign countries (Glover, 1986; and Reubens and Harrison, 1980), it was shown that Scandinavia and Western European countries have been increasing their use of apprenticeship to transition the handicapped from school to work. The survey of state education agencies in this project found program efforts underway in several areas. The program of counseling for access to apprenticeship in the Boston Public Schools included the handicapped. Vermont's SET Industries program, Connecticut's Pathways to Employment project (Hippolitus, 1986), and Prince George's County's (MD) employment preparation program each included some degree of emphasis on preparation for apprenticeship and access to apprenticeable trades.

The success enjoyed by employers and rehabilitation agencies in the Projects With Industry (PWI) programs has had the effect of "softening" even the most hardened walls of resistance to employment and training of the handicapped (see, e.g., Fountain, 1978; Kaplan and Hammond, 1982; Magee, Fleming, and Geletka, 1982; McMillion and Rice, 1983; Pati and Adkins, 1981; and Reisner, Haywood, and Hastings, 1983). In this study, PWI programs sponsored by the Nevada AFL-CIO and the International Association of Machinists and Aerospace Workers (I AM CARES) reported linkages with apprenticeship for placement and training of handicapped workers.

PWI programs have stimulated the development of new strategies for working with handicapped workers once employed and on the job site. The ability to market handicapped individuals for employment has improved (Rehab BRIEF, 1979, and 1985). Specific strategies and tools such as supported employment (Rehabilitation Research and Training Center...., 1985), the job coach (Wehman and Melia, 1985), the job accommodation network (Rochlin, 1985), and the range of accommodations that have been tried and tested (Berkeley Planning Associates, 1982) are indicative of an emerging sense of confidence and competence among education/training and rehabilitation professionals.

B. Coordination of Apprenticeship's Role via Industry-Education Cooperation

Recommendations from survey respondents regarding inter-organizational coordination and communication accounted for 16% of the total number of recommendations made. Some of these were:

* Much more in-service training and direct one:one awareness programming must occur between Special Needs Coordinators, Apprenticeship Leaders, and T&I Instructors serving the disabled in order to get this aspect operable.

* Development of special coordination efforts between the U.S. Department of Labor and U.S. Department of Education as called for under the Carl D. Perkins Vocational Education Act of 1984 for activities related to increasing participation by handicapped individuals into apprenticeship programs.

* Establish Employer Advisory Committees to advise handicapped training schools on how to prepare handicapped to meet apprenticeship entry level qualifications.

While it is clear that this inter-organizational coordination and communication must receive due attention at the national and state levels, effectiveness will be more readily apparent if this coordination and communication occurs in meaningful ways at local and sub-state regional levels.

The establishment of labor market area networks such as the IAM/CARES project in the Seattle area is a feasible way to proceed. Another model to examine is that of the National Association for Industry-Education Cooperation (NAIEC), which works with states to help them develop a coordinating role at the state level which drives a statewide network of local Industry-Education Councils. The purpose of an I-E Council is to provide a mechanism for school improvement and economic development.

C. Policy and Program Development Initiatives

The intent of the round table session was to bring together representatives from apprenticeship, special education, vocational rehabilitation, and vocational special needs to review the preliminary study findings. The task of the round table group was to extract from the preliminary findings implications and recommendations for policy, program development initiatives, and future research.

The nominal group technique process (Delbecq, Van de Ven, and Gustafson, 1975) was used to guide the group's activity and structure the output of the meeting. A nominal group responds to a specific question, generates ideas freely related to the question, discusses the ideas, and then places those ideas into a prioritized list through a consensus building process. The question put before the round table session was as follows:

> What implications for policy and program development, and what recommendations for future research, do you see as important and/or necessary to facilitate the participation of handicapped in apprenticeship?

The output of the meeting is a list of 16 items given in Table IV-1 (see pages 63 & 64). The items are listed in priority order, top to bottom, based on the total vote count given the item in the group's voting. Items # 1, 2, 4, 8, 11, 12, 13, 15, and 16 are related to policy and program development. Those receiving the highest priority rankings were: (1) thorough dissemination of the law; (12) bring more occupations into apprenticeship; and (15) market/promote in relation to incentives identified from research, with a focus on tax incentives.

Dissemination of existing legislation appears to be a higher priority than revisions to legislation or law. The combination of federal legislation and regulations (apprenticeship, vocational education, special education, and rehabilitation) appears to provide an adequate legal basis for the inclusion of qualified handicapped individuals in apprenticeship. One could argue that the position could be strengthened by adding the phrase, "qualified handicapped individual," to the Federal Regulations 29 CFR 30.

At the state level, however, only a handful of respondents in vocational special needs, special education, and vocational rehabilitation indicated their state/agency has laws and/or policies which pertain to the participation of handicapped persons in apprenticeship. Laws in New Hampshire, Iowa, Oregon, Delaware, Florida and New York address the right to equal access to apprenticeship for the handicapped. New York State's legislation (Section 811 of the Labor Law) and regulations, as amended effective November 20, 1978, provide a model which other states could follow.

The need to bring more occupations into apprenticeship is one way of opening up new apprenticeable occupations which could be pursued by the handicapped. The current list of BAT recognized apprenticeable occupations contains 750 job titles with corresponding DOT Codes. Of these, 255 occupations, for one reason or another, are no longer in demand and don't have any registered apprentices. According to the BAT Director,

"...the time has come to tighten up the National Apprenticeship System. To some extent it has become unwieldy, it lacks a certain discipline and is exposed to influences other than its ability to train workers for the really skilled occupations.

The time has come to narrow down the list of apprenticeable occupations to only those which are active. For example we now have a BAT policy that any program which does not have an active apprentice for two years is removed from the data bank; perhaps the same should be done with the list of apprenticeable occupations. Our limited resources should be concentrated on those occupations where there is a need."

(Report of the Director...., 1986, p. 6)

Prior to adding apprenticeable occupations, then, a review of those not in use should be undertaken to determine if any of them might meet the training and employment needs of the handicapped. Bringing more occupations into the apprenticeship system should be done following careful study of the total national situation.

The third highest priority was to market/promote handicapped participation focusing on incentives identified through research. This priority for program development is consistent with the top recommendations made by survey respondents discussed earlier in this chapter. Cruz (1976) and Rehab BRIEF (1979, 1985) report successful marketing strategies which highlight such incentives as reduced tardiness and absenteeism, increased productivity, lower turnover of personnel, and tax credits. Such incentives will be bolstered by the renewal of the Targeted Jobs Tax Credit in the Tax Reform Act of 1986. As well, strategies to overcome resistance to labor unions have been identified (Ross, 1981; Tramm, Enteen, and Herman, 1979). There appears to be a sufficient information base on incentives to effectively guide and support marketing efforts.

D. Future Research

The round table session developed seven items related to research and demonstration activities (refer to #3, 5, 6, 7, 9, 10 and 14). Two of these items were ranked very high in the priority ordering. They included: (10) need to identify apprenticeships that have served disabled...and document them in terms of who, what, where, when, under what circumstances, and so on; and (14) research incentives and disincentives of apprenticeship and hiring the handicapped.

In part, this research project attempted to identify apprenticeships that have served the disabled, although admittedly with limited resources and a slightly different focus. Project staff were able to visit and document seven programs during four site visits. Our emphasis was on the programs and their structure more so than on the apprenticeships, per se. This recommendation suggests another strategy for determining in what occupations and how well handicapped are being served in apprenticeship. Such a research study would

obviously begin by focusing on registered apprentices rather than on registered programs.

Research on incentives and disincentives to handicapped participation in apprenticeship and hiring the handicapped may be more difficult relative to disincentives than incentives. There is, at least, to some extent, a research base of information on incentives. Concern with disincentives and their investigation is more recent, no doubt heightened by increased disability payments and more job openings in service industries which are typically lower paying. The economics of work versus disability income is one factor. There are likely to be numerous psychological factors as well.

TABLE IV-1

Results of Nominal Group Technique Process

| Priority # | Total Vote Count | Statement of Item |
|---|---|---|
| 1 | 21 | There is a need to identify apprenticeship programs that have served disabled persons (who, what, where, when, under what circumstances, etc.). |
| 2 | 18 | There is a need to bring more occupations into the apprenticeship system (i.e., the greater number and diversity of apprenticeable occupations, the more opportunities for the disabled). |
| 3 | 14 | There is a need to identify and publicize apprenticeship programs that are actively recruiting new apprentices. |
| 4 | 10 | There is a need for more thorough dissemination of the legal mandate for equal employment and training opportunities for qualified handicapped individuals so that programs understand better what needs to be done. |
| 4 | 10 | Research should be conducted on the incentives and disincentives to program sponsors, employers, and handicapped persons related to hiring the handicapped and their participation in apprenticeship. |
| 4 | 10 | We need a marketing/promotion for participation of handicapped in apprenticeship which emphasizes the incentives, e.g., tax incentives for employers. |
| 4 | 10 | We need to overcome the apprehension toward "apprenticeship" and "disability" which exists in the community in order to deal with expanding these services to the disabled. |
| 8 | 8 | We need to create and follow through with specific demonstration programs (not just pilot tests) to examine all issues including resources, program structures, and functional levels of participants. |
| 8 | 8 | There is a need to match occupational requirements with disabilities. |
| 10 | 4 | Effective in-service training and staff development needs to be provided for apprenticeship program personnel to overcome focus on persons' limitations. |

| Priority # | Total Vote Count | Statement of Item |
|---|---|---|
| 11 | 3 | Improve linkages between all agencies and organizations involved. |
| 11 | 3 | There is need for improved coordination at both state and local levels. |
| 13 | 0 | We need to develop a proactive affirmative action policy within industry that pertains to employers' functions and responsibilities and is not just a "club" for enforcement. |
| 13 | 0 | There is a need to get information on apprenticeship to the schools at both state and local levels. |
| 13 | 0 | There is a need to develop specific documentation of the impact and value of apprenticeship programs working with the handicapped. |
| 13 | 0 | We need to examine the apprenticeship system to see if it can accommodate all individuals or if it needs altering. |

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## APPENDIX

List of Key Federal and State Agencies and National and International Organizations in Apprenticeship and Education and Training of the Handicapped.

State Personnel Responsible for
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and Limited English Proficient Persons

* * * * *

State Directors of Special Education

* * * * *

Directors of State Vocational Rehabilitation
Agencies (General and Blind)

* * * * *

State Apprenticeship Agencies

* * * * *

Federal Committee on Apprenticeship

* * * * *

Selected National Organizations and
Officials Promoting Apprenticeship and Training

* * * * *

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Director, Office of Policy Analysis & Legislation for Voc. & Adult Education
U.S. Department of Education
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Washington, D.C. 20202-3307

Mr. Donald J. Grabowski
Past President
National Association of State & Territorial Apprenticeship Directors
State Campus Building #12
Albany, New York 12240

## Selected National Organizations and Officials Promoting Apprenticeship and Training

International Union of Electrical, Radio and Machine Workers, International Skilled Trades Council
P.O. Box 5445
Evansville, Indiana 47715
Chairman: Elmer L. Ransom

National Glaziers and Glassworkers Industry Training and Journeymen Education Fund
10451 Twin River Road, Suite 415
Columbia, Maryland 21044
Executive Director: Larry Evans

National Joint Architectural Coatings Finishers Apprenticeship and Training Committee
601 East 70th Street
Indianapolis, Indiana 46220
National Coordinator: J. F. Iselin

Operative Plasterers, and Cement Masons' International Association of the United States and Canada
1125 17th Street, NW
Washington, DC 20036
General Representative: Joseph J. Hauck

International Association of Machinists and Aerospace Workers
1300 Connecticut Avenue, NW
Washington, DC 20036
Director, Apprenticeship Dept.:
Charles Bradford

International Brotherhood of Electrical Workers
1125 15th Street, NW
Washington, DC 20005
Assistant to the President:
Anthony Salamone

International Union, United Automobile, Aerospace and Agricultural Workers of America
8000 E. Jefferson Avenue
Detroit, Michigan 48214
President: Owen F. Bieber

American Culinary Federation, Inc.
P.O. Box 3466
St. Augustine, Florida 32084

American Culinary Federation Educational Institute/National Apprenticeship Chairman
c/o Johnson County Community College
12345 College
Overland Park, Kansas 66210

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**FINAL REPORT**

**STATE-OF-THE-ART REPORT**
**PARTICIPATION OF HANDICAPPED IN APPRENTICESHIP**

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